WAIMAKARIRI
DISTRICT COUNCIL

BC No: 200635.02

SITE DETAILS:

33 TARA CRESCENT

WOODEND

LEGAL:

LOT 156 DP 525252

APPROVED BUILDING CONSENT DOCUMENTS AND PLANS

(FULL SET SUPPLIED)

- ON SITE COPY -

- These plans and specifications must be kept on site during construction, and made available to the building officer on request. Failure to do so will mean an automatic failure of the building inspection and will necessitate re-booking the inspection at the applicant's expense.
- All boundary survey pegs must be located and flagged by the owner before work is commenced.

INSPECTIONS

for bookings or building enquiries

please phone the BUILDING UNIT on:

03 3118906

or

Email inspection bookings to: bcbooking@wmk.govt.nz

- Please refer to your inspection schedule for details of inspections to be carried out.
- 2-3 working day's notice should be given and provision made to allow access.
- The Code Compliance Certificate will be issued once the:
  - Final inspection has been carried out and passed
  - Audit of WDC building consent file has been completed
  - Payment of any outstanding invoices is received

Building Consent BC200635.02
Received 23/12/2021

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 2 of 125

Dwellings, Outbuildings, Swimming Pools and Other Works (Not Commercial)

Section 1
Statutory Forms

- **Inspection List** – By Council
- **Building Consent Form (Form 5)** – By Council
- **Code Compliance Application (Form 6)** – By Council
- **Installation & PS3 Forms** – By Council
- **Application Form**
- **LBP Design Certificates**
- **Record of Title or Sales & Purchase Agreement**
- **PIM, Resource Consent** – By Council

Waimakariri District Council
215 High Street
Private Bag 1005
Rangiora 7440, New Zealand
Phone 0800 965 468

PLEASE NOTE

- Although your Consent documentation states 48 hours notice is required, it is not always possible to carry out an inspection within this period.
- If an inspection of the building works is not carried out in accordance with the Inspection Schedule it could affect the issue of the Code Compliance Certificate.

To book inspections ring WDC on
03 311 8906

All inspections are subject to a separate charge.

All re-inspections will be charged and recorded separately even if other inspections are carried out on the same day.

Using engineers & other professionals
If an engineer has been engaged to carry out various site inspections you will need to provide copies of his/her site notices to us and a producer statement, a PS4 from the engineer confirming the building elements designed and inspected by the engineer were completed in accordance with the approved design.

Confirmation of installation of products
We require producer statements, warranties & installation certificates from various installers as a way of confirming products have been installed in accordance with the manufacturer's recommendations. These are commonly required for exterior claddings, wet area tanking, membrane roofing/decking and effluent fields. Energy certificates such as electrical and gas certificates need to be provided too. You will need to provide these to us prior to the issue of the Code Compliance Certificate.

Applying for a Code Compliance Certificate (CCC)
When you are satisfied your project is complete please book a final inspection and complete and sign *form 6*, application for Code Compliance Certificate which is enclosed with your building consent. You should have this form ready for when the building Inspector arrives on site to carry out the final inspection. Please note all outstanding monies must be paid prior to the issue of the CCC.

Grant or refuse a CCC
We are required to make a decision to grant or refuse a CCC if you do not formally apply for a CCC within two years of the granting of the building consent. The date your consent was granted is the date at the bottom of the building consent form. If you do not apply for a CCC or arrange an extension with us within the two year period we may carry out an inspection of the building work. An additional fee applies for this work.

Lapsing of your consent
Your building consent will lapse if building work has not commenced within 12 months after the date of issue of the building consent. The issue date is deemed to be the day you paid for the consent. In saying this we understand things don't always run smoothly so you can apply for a time extension which we may agree to. A fee applies for this.

Additional Site Inspection Sheet for Amendment

Application

Mt Lyford Investments Limited C/- Leigh Adams Architecture Limited 250 King Street Rangiora 7400	No.	BC200635.02
	Issue date	24 December 2021
	Overseer	Brenda McIndoe

Project

Description	1100 New (& prebuilt) House, Unit, Bach, Crib, Town Houses BC - Amendments, Amendments, 01 Standard Building Consent(20 W Processing Days)
Intended Life	Indefinite (50+)
Intended Use	Residential Dwelling
Estimated Value	$0.00
Location	33 Tara Crescent WOODEND
Legal Description	LOT 156 DP 525252 0.040700 Ha
Valuation No.	2161500201

This inspection sheet and all the approved plans and specifications relating to this building consent are to be available on site during construction. If the documentation required for a particular inspection is not available, this will mean automatic failure of the building inspection and will necessitate re booking the inspection at the applicant's expense.

Please give at least 48 hours notice for the next required inspection.

Work cannot proceed past each step until that step has been inspected and approved.

All inspections listed below are to be inspected by a WDC Building Inspector, an Engineer may also need to be engaged to inspect engineer requirements, this will be noted below.

BC200635.02 AMENDMENT to change acrylic showers to tiled showers to both ensuite and bathroom 33 TARA CRESCENT WOODEND LOT 156 DP 525252
Wet Area Tanking -

Waimakariri District Council
215 High Street
Private Bag 1005
Rangiora 7440, New Zealand
Phone 0800 965 468

Form 5 Amendment
Building Consent BC200635.02

Section 51, Building Act 2004

The building

Street address of building: 33 Tara Crescent WOODEND
Legal description of land where building is located: LOT 156 DP 525252 0.040700 Ha
Valuation number: 2161500201
Building name:
Location of building within site/block number:
Level/unit number: 1

The owner

Name of owner: Mt Lyford Investments Limited
Contact person: Michael Chernishoff
Mailing address: PO Box 298 Kaiapoi 7644
Street address/registered office:
Phone number: Landline: Mobile: 0274389109
Daytime: After hours:
Facsimile number:
Email address: mike@misco.co.nz
Website:
First point of contact for communications with the council/building consent authority: Leigh Adams Architecture Limited

Building work

The following building work is authorised by this building consent:
AMENDMENT to change acrylic showers to tiled showers to both ensuite and bathroom 33 TARA CRESCENT WOODEND LOT 156 DP 525252
New (& prebuilt) House, Unit, Bach, Crib, Town Houses
Housing - Detached dwellings
This building consent is issued under section 51 of the Building Act 2004. This building consent does not relieve the owner of the building (or proposed building) of any duty or responsibility under any other Act relating to or affecting the building (or proposed building).

This building consent also does not permit the construction, alteration, demolition, or removal of the building (or proposed building) if that construction, alteration, demolition, or removal would be in breach of any other Act.

This building consent is subject to the following conditions:

The Building Act 2004, Section 90, states that agents authorised by the building consent authority (the Council) for the purposes of this section are entitled, at all times during normal working hours or while building work is being done, to inspect –

(a) land on which building work is being or is proposed to be carried out; and
(b) building work that has been or is being carried out on or off the building site; and

(c) any building.

This building consent is issued with the following advice notes:
The installer shall provide the building consent authority a PS3 for the installation of the Internal wet area membrane prior to issue of Code Compliance Certificate.

Compliance schedule

Attachments

Copies of the following documents are attached to this building consent:
Consented Plans
Consented Specifications



Shirley Cresswell
Building Unit Administrator

On behalf of: Waimakariri District Council
Date: 24 December 2021

Building Consent BC200635.02
Received 23/12/2021

Waimakariri District Council
215 High Street
Private Bag 1005
Rangiora 7440, New Zealand
Phone 0800 965 468

BUILDING UNIT

Form 2 Application for a Project Information Memorandum and/or Building Consent

Dwellings, Outbuildings, Swimming Pools and Other Works e.g. Septic Tank, Bridge, Retaining Wall, Amendments and Exemptions

Under The Building Act 2004, Sections 33, 45 & Schedule 1, Part 1, Clause 2

WAIMAKARIRI DISTRICT COUNCIL
AMENDED Plan and/or Specifications APPROVED
BC200635.02 23/12/2021 brendam
Change acrylic showers to tiled showers to both

BC No.:

1. The Building

Street address (street/road/township): (*for structures that do not have a street address, state the nearest street intersection and the distance and direction from that intersection)*
33 Tara Crescent Ravenswood Woodend

Legal description of the land where the building is located: *(state legal description as at the date of application and, if the land is proposed to be subdivided, include details of relevant lot numbers and subdivision consent)*

Lot: 156 DP: 525252 Valuation Number: 2161500201 Resource Consent:

Building name: *(if applicable)* N/A

Location of building within site/block number: *(include nearest street access)*
As per sheet 1 of the submitted plans

Number of levels: 1 Unit/Level No.: 1

Area: *(total floor area; indicate area affected by the building work if less than the total area)*

Existing: 0 New: 160 Total: 160

Current lawfully established use: *(include number of occupants per level and per use if more than 1)*
Residential

Year building first constructed: 2021 *(Approximate date is acceptable, eg 1920's)*

2. The Owner - All details must be the legal owner's

Name of owner: *(include preferred form of address, e.g. Mr, Mrs, Ms, Miss, Dr, if an individual)*
Mt Lyford Investments Ltd

Contact person: *(not required if the owner is an individual. Must have a New Zealand address)*
Michael Chernishoff

Mailing address: 80 Mariehau Road Marshland Christchurch 8083

Street address/Registered office: *(if different than above)*
80 Mariehau Road Marshland Christchurch 8083

Phone number:

Landline:	Mobile:	Daytime:	After hours:	Fax:
0274389109	0274389109	0274389109	0274389109	N/A

Email: mike@misco.co.nz Website:

Building Consent BC200635.02
Received 23/12/2021

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 9 of 125

The following evidence of ownership is attached to this application:

☐ Copy of Record of Title *(formerly Certificate of Title)* OR ☑ Council to provide *(additional charge of $15)*
(Current within 1 month of being issued and must include a deposited plan [diagram])

☐ Signed copy of Sales and Purchase Agreement *(If Record of Title is not issued)*

3. Applicant - only required when the applicant is not the owner or the agent e.g. leasee/tenant

PLEASE NOTE - *Authorisation is required from the owner of the property.*

Name of applicant: *(e.g. leasee/tenant)* As per owners details

Contact person: *(not required if the applicant is an individual)*

Mailing address:

Street address/Registered office: *(if different than above)*

Phone number:

Landline:	Mobile:	Daytime:	After hours:	Fax:

Email: Website:

Relationship to owner: *(state details of the authorisation from the owner to make the application on the owner's behalf)*

4. Agent – Only required when the application is being made on behalf of the owner

PLEASE NOTE - *Authorisation is required from the owner of the property.*

Name of agent: Leigh Adams Architecture

Contact person: *(not required if the applicant is an individual)* Leigh Adams

Mailing address: 250 King Street Rangiora 7400

Street address/Registered office: *(if different than above)*
250 King Street Rangiora 7400

Phone number:

Landline:	Mobile:	Daytime:	After hours:	Fax:
033133479	0211631680	033133479	033133479	N/A

Email: leigh@leighadams.co.nz Website:

Relationship to owner: *(state details of the authorisation from the owner to make the application on the owner's behalf)*
Architectural designer

PLEASE NOTE - *The Agent will be the first point of contact for communications with the Council/Building Consent Authority regarding this application/building work*

5. Application

I request that the following (please select one) be issued for the building work described in this Application:

☐ Project Information Memorandum (PIM) only
☐ Building Consent for PIM No:
☐ Building Consent with PIM
☐ Building Consent without PIM *(Compliance Check applies)*
☐ Exemption from the need for B/C
(Refer Building Act 2004 Schedule 1, Part 1, Clause 2)
☑ Amendment to Building Consent BC200635
Please Note: *Amendments must be authorised by the owner*
☐ Building Consent for Above Ground Pool and/or Non-Exempt Small Heated Pool

WAIMAKARIRI DISTRICT COUNCIL
AMENDED Plan and/or Specifications APPROVED
BC200635.02 23/12/2021 brendam
Change acrylic showers to tiled showers to both

Building Consent BC200635.02
Received 23/12/2021
AMENDMENT ISSUED BC200635.02 - 24/12/2021 - Page 10 of 125

I wish to receive my approved documentation in the following format:

PLEASE NOTE - *If USB or hard copy, please confirm if you wish to pick it up from the Council or have it posted.*

☑ Electronically via Sharefile Transfer Portal (You must be set up and registered for this option)

☐ USB: ☐ Post OR ☐ Pick-up

☑ Hard copy (onsite): ☐ post OR ☑ pick-up

PLEASE NOTE - *One set of "On-site" hard copy consented documents must be available at all times for inspections.*

All consent related invoices/refunds to be billed and sent to:

☑ Owner ☐ Applicant ☐ Agent ☐ Or other (If other, please complete below)

Company name: *(if applicable)*

Contact person:

Mailing address:

Phone number:

Landline:	Mobile:	Daytime:	After hours:	Fax:

Email: Website:

PLEASE NOTE - *Any refunds are to the receipted name unless written authorisation has been received from the receipted person or company.*

Terms of trade

I/We understand that:

Building Consents shall be paid for when the consent is collected/uploaded or if the consent is not collected/uploaded within three months after the date of consent being granted, the work done to date portion i.e. admin and processing costs of the account will be due and payable. The balance of the invoice will be payable when the consent is collected/uploaded.

All other accounts shall be paid by the 20th day of the month following the month in which the invoice is issued.

I/We agree to pay according to these terms for any goods or services you supply to us. Failure to meet these Terms of Trade may result in any credit arrangement being withdrawn with any balance becoming payable within seven days. Should failure to meet the terms of trade result in debt recovery and/or legal proceedings, any costs whatsoever incurred in the collection of the debt including debt collector's fees and commissions and legal costs, charges and expenses on a solicitor and own client basis will be added to the account and will be payable by me/us.

Application authorisation

By entering your name in the box below you are giving your authority for this application to proceed under Sections 33 and 45 of the Building Act 2004.

Name: Leigh Adams Date: 6th December 2021

I am the: ☐ Owner ☐ Applicant on behalf of, and with the authority of the owner
☑ Agent on behalf of, and with the authority of the owner

6. The Project

Description of work *(e.g. dwelling, alteration/addition). If an amendment, please provide a complete description of the nature of the amendment.*

Single storey dwelling with attached garage - amendment is to change showers from acrylic cabinets to tiled showers with step over sills to both ensuite and bathroom.

Building Consent BC200635.02
Received 23/12/2021
AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 11 of 123

Specify the intended use of the building: *(e.g. detached dwelling, multi-unit dwelling, show home, sleepout or outbuilding - shed/garage etc.)*

Residential dwelling

Will the building work result in a change of use of this building? ☐ Yes ☑ No

If Yes, provide details of the new use:

Will hazardous substances be stored in the building? ☐ Yes ☑ No

Intended life of the building:

☑ Indefinite but not less than 50 years Or specified as ____ years

Is this a staged consent? ☐ Yes ☑ No

If staged, provide details *(e.g. Stage 1 of 3)*

N/A

List Building Consents previously issued for this building (if any): *(i.e. is this project being constructed in stages? Is this consent for a relocated or transportable building?)*

N/A

Estimated value of the building work on which the building levy will be calculated (incl. GST): *(state estimated value as defined in section 7 of the Building Act 2004)*

$ 275000

If this is an application to amend a building consent, advise the estimated value of amended building work (incl. GST) $ 0

Is this in addition to, or reduction from, what was stated with the original application?

☐ Addition ☐ Reduction ☑ No change

7. Restricted building work

Will the building work include any restricted building work? ☑ Yes ☐ No

If Yes, provide the following details of all Licensed Building Practitioners who will be involved in carrying out or supervising the restricted building work (if these details are unknown at the time of the application, they must be supplied before the work begins).

Licence class	Name	Licensed building practitioner number (or registration number if treated as being licensed under section 291 of the Building Act 2004)
Foundations	TBC	TBC
Carpentry	TBC	TBC
Exterior Plasterer	TBC	TBC
Bricklayer	TBC	TBC
Blocklayer		
Roofer	TBC	TBC

Building Consent BC200635.02
Received 23/12/2021

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 12 of 125

Key personnel

Builder

Name: Reg. No.:

Address:

Phone No.: Email:

Designer(s)

Name: Leigh Adams Reg. No.: BP118930

Address: 250 King Street Rangiora 7400

Phone No.: 033133479 Email: leigh@leighadams.co.nz

Certifying drainlayer

Name: Reg. No.:

Address:

Phone No.: Email:

Certifying plumber

Name: Reg. No.:

Address:

Phone No.: Email:

Certifying gasfitter

Name: Reg. No.:

Address:

Phone No.: Email:

Registered electrician

Name: Reg. No.:

Address:

Phone No.: Email:

Structural engineer

Name: Reg. No.:

Address:

Phone No.: Email:

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 13 of 125

8. Project Information Memorandum - This section is not applicable if this application is for a building consent only

The following matters are involved in the project:

- ☐ Subdivision
- ☑ Alterations to land contours
- ☑ New or altered connections to public utilities
- ☑ New or altered locations and/or external dimensions of buildings
- ☑ New or altered access for vehicles
- ☐ Building work over or adjacent to any road or public place
- ☑ Disposal of stormwater and wastewater
- ☐ Building work over any existing drains or sewers or in close proximity to wells or water mains
- ☐ Registered historic site or place, tick if applicable (only applies where a PIM has not previously been issued for the building work)
- ☐ Other matters known to the applicant that may require authorisations from the territorial authority:

N/A

Notes

Other notes or comments which you may wish to add, eg: Resource Consents

N/A

9. Building consent - This section is not applicable if this application is for a Project Information Memorandum only

The following plans and specifications are attached to this application.

Application Plans
Application Specification and Supporting Documentation

Building Consent BC200635.02
Received 23/12/2021
AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 14 of 129

The building work will comply with the Building Code as follows: *(Note: if you are not sure what clauses are applicable, consult with your builder, designer or architect)*

Clause *(Tick relevant clause numbers of Building Code)*	**Means of compliance** *(Refer to the relevant compliance document(s) or detail of alternative solution in the plans and specifications)*	**Waiver/modification required** *(State nature of waiver or modification of building code required)*
☐ B1 Structure	Please see attached overleaf	
☐ B2 Durability		
☐ C1-C6 Protection from fire		
☐ D1 Access routes		
☐ D2 Mechanical installations for access		
☐ E1 Surface water		
☐ E2 External moisture		
☐ E3 Internal moisture		
☐ F1 Hazardous agents on site		
☐ F2 Hazardous building materials		
☐ F3 Hazardous substances and processes		
☐ F4 Safety from falling		
☐ F5 Construction and demolition hazards		
☐ F6 Visibility in escape routes		
☐ F7 Warning systems		
☐ F8 Signs		
☐ F9 Means of restricting access to residential pools		
☐ G1 Personal hygiene		
☐ G2 Laundering		
☐ G3 Food preparation and prevention of contamination		
☐ G4 Ventilation		
☐ G5 Interior environment		
☐ G6 Airborne and impact sound		
☐ G7 Natural light		
☐ G8 Artificial light		
☐ G9 Electricity		
☐ G10 Piped services		
☐ G11 Gas as an energy source		
☐ G12 Water supplies		
☐ G13 Foul water		
☐ G14 Industrial liquid waste		
☐ G15 Solid waste		
☐ H1 Energy efficiency		

Building Consent BC200635.02
Received 23/12/2021
AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 15 of 125

10. Compliance Schedule - This section is not applicable if there are no specified systems or if the application is for a Project Information Memorandum

The specified systems for the building are as follows: *(specified systems are defined in regulations)*

N/A

The following specified systems are being altered, added to, or removed in the course of the building work:

N/A

☑ There are no specified systems in the building

11. Attachments

The following documents are attached to this application:

☑ Plans and specifications (list under section 9)

☑ Memoranda from licensed building practitioner(s) who carried out or supervised any design work that is restricted building work

☐ Project information memorandum

☐ Development contribution notice

☐ Certificate attached to project information memorandum

☑ Completed relevant application checklist(s) – refer to Appendix

Please continue on the Appendix as follows for further information requested by the Waimakariri District Council.

AMENDMENT ISSUED BC200635.02 - 24/12/2021 - Page 16 of 124
Building Consent BC200635.02
Received 23/12/2021

National Environment Standard (NES)

This section relates to the National Environmental Standard for Assessing & Managing Contaminants in Soil to Protect Human Health (NES).

The NES includes regulations controlling **soil disturbance, change of use, subdivision, and removal/ replacement of fuel storage systems** on properties which have been used either now or in the past for a hazardous activity or industry (known as HAIL) that may have resulted in contamination of the soil. The table below determines whether the NES applies to your proposal.

	Yes	No
Is the application site listed on Environment Canterbury's Listed Land Use Register (LLUR)? www.llur.ecan.govt.nz If **YES**, please include a copy of the LLUR statement with your application.	☐	☑
If the site is not listed on the LLUR, is an activity described on the Hazardous Substances and Industries List (HAIL) currently being undertaken on the piece of land to which this application relates, or is it more likely than not to have ever been undertaken on the land? The HAIL list is available to view at Hazardous Activities and Industries List (HAIL)	☐	☑

Type of HAIL activity:

If the answer to either of the above questions is YES, then the NES will apply, depending on the type of activity. Please identify whether the application involves the activities below.

PLEASE NOTE - *If the answer to both of the previous questions is No, you do not need to answer the remaining questions in this section.*

	Yes	No
Has the property been recently subdivided?	☐	☐
Will the proposed activity involve the disturbance of more than 25m³ of soil (per 500m² of disturbed area)? Volume of soil disturbed:	☐	☐
Will the proposed activity involve the removal of more than 5m³ of soil (per 500m² of disturbed area) from the site? Volume of soil removal:	☐	☐
Does the application involve changing the use of the land to one which, because the land has been subject to a HAIL activity, is reasonably likely to harm human health? (e.g. orchard to a residence)	☐	☐
Does the application involve replacing or removing fuel storage systems or parts of it?	☐	☐

If the answer to any of the above activity questions is also YES, then the NES will apply and you will need to establish whether the proposed activity complies with the NES.

- Changing the land use will require resource consent if the permitted activity requirements of the NES are not complied with. These include provision of a Preliminary Site Investigation carried out by a suitably qualified and experienced practitioner.
- Soil disturbance or removal exceeding the specified volumes require resource consent.
- Removal or replacement of a fuel storage system will require consent if the permitted activity requirements of the NES are not complied with.

Does the proposed activity require resource consent under the NES? If **YES**, a resource consent is required and with the application an assessment under the NES must be provided. A Detailed Site Investigation may be required.	☐	☐

Vehicle crossing

Is a new vehicle crossing required or an existing crossing altered for this project?

☐ Yes ☑ No ☐ Resource consent applied for

If yes, please complete and submit the Vehicle Crossing Application Form **and send to** office@wmk.govt.nz

Building Consent BC200635.02
Received 23/12/2021

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 17 of 125

Application form

(One copy)

Office use only

These have been provided:

- ☑ All sections fully completed as applicable to the project
- ☑ Means of Compliance with NZBC - designer to complete
- ☑ Provide the correct legal description (Council can help with this)
- ☑ Provide one copy of the current Record of Title, or Sales and Purchase Agreement - not more than one month old
- ☑ Give name and contact numbers of contact person (if not the owner)
- ☑ State the project location (street address or location details as near as possible if no address)
- ☑ Application authorised and dated
- ☑ Agent relationship to owner stated (where applicable)
- ☑ Certificate/s of design work (LBP) ☐

Bookmarks

PLEASE NOTE - *Our current software does not enable us to maintain bookmarks within the consent documents during processing and granting. (This may be reviewed once a software solution becomes available.)*

Project Information Memorandum (PIM)

This section must be completed if you are applying for a PIM. **DO NOT** *complete this section if a PIM has already been issued. The following documents are attached to this application:*

- ☑ Site plan, Floor plans, Elevations for proposed building (electronic preferred or if hard-copy minimum size A3)
- ☑ Record of Title, or Sales and Purchase Agreement if Record of Title is not issued. Current Record of Title required (current within one month of application)
- ☑ Application fee (as per Council Fees and Charges Schedule) ☐

Building consent

This section must be completed if you are applying for a building consent. **DO NOT** *complete this section if the Application is for a Project Information Memorandum only.*

The following documents are attached to this application:

- ☑ 1 copy - building plans (site plans, floor plans, elevation plans. All plans to be dimensioned, scaled and accurate electronic preferred or if hard-copy minimum size A3)
- ☑ 1 copy of each - specifications, producer statements, truss details (refer below)
- ☑ 1 copy - Record of Title or Sale and Purchase Agreement if Record of Title is not issued. Current Record of Title required (current within one month of application)
- ☑ Restricted building work - see page 4
- ☑ Key personnel - see page 5
- ☑ Building work compliance with the Building Code - see page 7 ☐

PLEASE NOTE - *Swimming Pool document checklist on the following page to be completed if applicable.*

Building Consent BC200635.02
Received 23/12/2021

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 18 of 125

Swimming pools (as applicable)

Office use only
These have been provided:

- ☐ Site plan, showing location of pool and existing buildings, location of fence, boundaries and existing waterways
- ☐ Fence construction. Show the height, gates, self-closing device, construction type etc (see "A Guide to Pool Fencing")
- ☐ Also show how any doors or windows that form part of the fence will comply

Brand and model of pool:

Size of the pool:

- ☐ Drainage plan. Show discharge point
- ☐ Producer statement (where applicable)
- ☐ Installation instructions/manual
- ☐ Show filling point for pool (tap) and backflow protection ☐

Design basis

(To be completed by the designer)

Please list the following basis for the building design:

☑ Wind zone	High
☑ Earthquake zone	2
☑ Snow zone/altitude	4
☑ Corrosion zone (if applicable)	1

- ☐ Building is specifically engineer-designed
- ☐ Complies with NZS 3604:2011
- ☑ Both specific design and NZS 3604:2011 ☐

Design documents

(One copy)

- ☑ Weather tightness risk matrix
- ☑ Truss design layout and Producer Statement
- ☑ Bracing calculations/plan
- ☑ H1 Energy efficiency calculations ☐

Site plan

(One copy, electronic preferred or if hard-copy minimum size A3)

- ☑ Overview of site showing legal boundaries as per current Record of Title
- ☑ Showing proposed and existing structures (including swimming pools)
- ☑ Distances to boundaries
- ☑ Proposed and existing site levels
- ☑ North point
- ☑ Utility infrastructure (sewer, water pipelines, septic tanks etc) where applicable
- ☐ Water races, drains, topographic features ☐

Building Consent BC200635.02
Received 23/12/2021

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 19 of 125

Drainage layout

(One copy to scale usually 1:100 or 1:50, electronic preferred or if hard copy minimum size A3)

Office use only

These have been provided:

- ☑ Foul water - showing waste pipes, sizes, grades, venting
- ☑ Foul water to discharge point
- ☑ Storm water - pipe sizes, grades, downpipe locations
- ☑ Storm water drain to discharge point ☐

Foundation layout

(One copy to scale usually 1:100 or 1:50, electronic preferred or if hard copy minimum size A3)

- ☑ Full foundation layout plan
- ☐ For timber floors, show all pile layout, pile types and bracing location
- ☑ Slab thickenings, shrinkage control joints and reinforcing rebates ☐

Floor plans

(One copy to scale usually 1:100 or 1:50, electronic preferred or if hard copy minimum size A3)

- ☑ Layout of all floors fully dimensioned. For alterations and/or additions provide both new and existing floor plans
- ☑ Doors and window positions and sizes
- ☑ Layout of amenity areas (laundry etc)
- ☑ Main structural beams that are not shown elsewhere
- ☑ Lintel sizes
- ☑ HWC location
- ☑ Roof space access
- ☐ Gas cylinder location
- ☑ Room names
- ☑ Location of smoke alarms
- ☑ Location of heating unit (if applicable) ☐

Exterior elevations

(One copy to scale usually 1:100 or 1:50, electronic preferred or if hard copy minimum size A3)

- ☑ Elevations of all external walls showing claddings
- ☑ Doors and windows showing opening sections
- ☐ Show location of solar panels
- ☑ Accurate ground levels existing and proposed
- ☐ Subfloor ventilation for timber floors
- ☑ Show roof bracing on elevations if not shown elsewhere ☐

Cross section and construction details

(One copy to scale usually 1:50 or 1:20 for sections and 1:10 for details - minimum scale, electronic preferred or if hard copy minimum size A3)

- ☑ Roof lines, overhangs, floor levels, ground levels
- ☑ Major vertical dimensions
- ☑ Foundation, wall and roof structure materials
- ☐ Upper level decks or balconies over lower level room must be fully detailed including the stormwater disposal and overflow precautions

Building Consent BC200635.02
Received 23/12/2021
AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 20 of 125

- [ ] Stairs, handrails and balustrade showing pitch and head clearances
- [x] Structural connections, posts to footings, beams to posts, trusses or beams to walls
- [x] Component fixing information is to be provided for all structural and framing components
- [x] Foundation and footing details and reinforcing. Show height from finished floor to ground level
- [ ] Pile details for timber floors
- [ ] Floor bracing details
- [x] Timber grade and treatment
- [x] Damp proof membranes, building papers and insulation systems/materials
- [x] Flashing details and documents
- [x] Roof penetrations
- [x] Shower floor details and wall to shower base junction detail
- [x] Sealing to wet area fixtures
- [x] Water splash prevention
- [x] All other building components that are not otherwise detailed or are unusual in any way ☐

Specification

(One copy)

The specification must be for the project. We will not accept standard specifications unless they relate directly to the building and they cover the project accurately and fully. Multi-choice specifications will not be accepted. A brief accurate specification is usually best.

- [x] Provide a written specification to cover all of the trades involved in the project. All materials used in the project are fully specified including fixings of all materials and components
- [x] The specification can be written on the drawings as long as all materials are fully covered ☐

Important things to include in your application

(One copy - where relevent)

- [x] The chartered professional engineer's Producer Statement
- [x] The engineer's monitoring schedule if the engineer chooses to do site monitoring
- [x] All structural calculations
- [x] Structural details showing connections and details of the components
- [ ] Solar technical details and plumbing schematic
- [ ] Log fire and flue installation instructions
- [ ] If log fire secondhand, engineer's certification required
- [ ] Current potable water test (current within 18 months)
- [ ] Effluent disposal design & ECan's copy of the submitted application form or approval
- [ ] Wastewater system designs when required to be done by a chartered professional engineer such as in a hazard zone
- [ ] Supporting manufacturer's trade literature and appraisals / certificates included ☐

Geotechnical report

- [x] Geotechnical report provided, if applicable. Record report number: ☐

Building Consent BC200635.02
Received 23/12/2021

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 21 of 125

Office use only

Further information required? ☐ Yes ☐ No

WAIMAKARIRI DISTRICT COUNCIL

Date/time received: Officer:

Date/time vetted/accepted: Officer:

Office use only

Amount paid: $ Date: Officer:

☐ Fee paid on application ☐ Deposit invoice sent

Date payment processed: Receipt: Officer:

Important information

All the relevant information on this form is required to be provided under the *Building Act 2004* and/or *Resource Management Act 1991* for the Waimakariri District Council to assess your application. Under these Acts this information has to be made available to members of the public if requested. The information contained in this application may be made available to other units of the Council. You have the right to access the personal information held about you by the Council which can be readily retrieved. You can also request that the Council correct any personal information it holds about you.

Application information

a. Project Information Memorandum (PIM):
   A PIM will be issued within 20 working days provided all the required information is supplied with the application.
   Processing time is stopped whenever further information is required and starts again when the correct information is received.
   It is not mandatory to apply for a PIM. Applicants can choose not to apply for a PIM when they consider that the information would not be relevant for their building project.
   A fee is required to accompany your PIM application (as per Council's Fees and Charges Schedule).

b. Compliance Check:
   Where a PIM is not sought, a Compliance Check will be undertaken to ensure your proposal complies with the District Plan.

c. Building Consent (BC):
   A Building Consent will be processed within a maximum allowable time of 20 working days provided all the information required has been supplied. Processing time is stopped whenever further information is required and starts again when the correct information is received.
   Once the Building Consent has been granted, you will receive notification, which will include an invoice for the fees payable.
   Once the fees are paid in full, your Building Consent will be issued. Work must not start until the Building Consent is issued, and any Resource Consent requirements have been resolved.
   A Building Consent lapses and is of no effect if the building work to which it relates does not commence within 12 months after the date of issue of the Building Consent or any further period that the Building Consent Authority may allow.

d. Combined Project Information Memorandum & Building Consent Applications:
   Applications for a combined PIM/BC will only be accepted when sufficient information is provided to permit the Building Consent to be processed.
   If insufficient information is provided, then further information will be requested, or your application may be returned to you.

e. If the applicant does not own the land, they must provide written approval from the owner to submit this application.

Building Consent BC200635.02
Received 23/12/2021

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 22 of 125

Levies payable

Under *the Building Act 2004 s53, s55 s402* Council are authorised to collect levies for the MBIE (*Building Levy Order 2005*) and BRANZ (*Building Research Levy Act 1969*). Levies are only payable on building works where the construction value exceeds a prescribed amount.

Building Act 2004

Building Levy Order 2005

Building Research Levy Act 1969

Fees

The application for a PIM and/or Building Consent must be accompanied by the fees as described in *Sections 33 and 45 of the Building Act 2004*. The work to process a PIM and/or Building Consent will be invoiced and needs to be paid in full before the PIM and/or Building Consent can be granted, refer to building services fees and charges.

Inspections

During the process of construction, inspections will be necessary to confirm all work complies with your approved Building Consent documentation. Please phone the Council Building Unit on 03 311 8906 at least **48 hours in advance** of requiring an inspection. Bookings are subject to demand and the availability of Inspectors, **please be advised that it is not always possible to carry out an inspection within 48 hours.**

The inspections required will be set out in the Building Consent documentation issued by the Council. Failure to have a prescribed inspection carried out may put the issue of the Code Compliance Certificate at risk.

All inspections including re-inspections are subjected to a separate charge, even if carried out on the same day.

Resource consent

Your application will be assessed by the Planning Unit of the Council to determine whether your project complies with the relevant District Plan requirements.

If your application does not comply with District Plan requirements, you will need to either amend your proposal to comply or apply for a Resource Consent. A Certificate will be attached to your Project Information Memorandum to notify that a Resource Consent is required prior to building work commencing. It is recommended that you phone the Planning Unit on 0800 965 468 to discuss the process.

Code compliance certificate

A Building Consent is not completed until it has been issued with a Code Compliance Certificate. The owner is required to complete a separate application for a Code Compliance Certificate as soon as practicable after the building work is completed. In any event no later than two (2) years after the granting of the Building Consent, Council is required to decide whether or not a Code Compliance Certificate can be issued. If your project will not be completed within two years, you will need to apply for a time extension*.
*Fees apply

Agency

The owner may authorise an agent to submit an application on their behalf.

The Agent will be the first point of contact for all communications with the Council/Building Consent Authority regarding this application under *Sections 33 and 45 of the Building Act 2004*. They will receive all correspondence and must be authorised by the Owner. All amendments require new authorisation.

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 23 of 125
Building Consent BC200635.02
Received 20/12/2021

Section 6
Technical Information

- Septic Tank & Effluent Design incl. fencing
- ECan Approval Documents
- Gas Fire
- Heating Unit
- Solar Panels
- Central Heating Systems
- Manufacturer's Literature
- A4 Details/Acceptable Solution Extract
- Well/Water Test

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 24 of 125

Building Consent BC200635.02
Received 20/12/2021

ARDEX WPM 002

Superflex Bathroom & Balcony - 2 Part

2 Part Undertile Waterproofing Membrane

BRANZ Appraised

Rapid Drying Time

Two Component Undertile Waterproofing Membrane

Advanced acrylic – will not re-emulsify

Liquid reinforced – eliminates the need for reinforcing mat

Water based – safe to use, low odour and easy cleaning

Meets class III category for AS/NZ 4858 Wet Area Membranes

Low VOC content – meets Green Building Council of Australia Green Star IEQ-13 requirements

WAIMAKARIRI DISTRICT COUNCIL
AMENDED Plan and/or Specifications APPROVED
BC200635.02 23/12/2021 brendam
Change acrylic showers to tiled showers to both

Building Consent BC200635.02
Received 20/12/2021
AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 25 of 125

Superflex Bathroom & Balcony - 2 Part
2 Part Undertile Waterproofing Membrane





Copies available on request.

PRODUCT DESCRIPTION

Ardex WPM 002 (Superflex Bathroom & Balcony 2 Part) is a tough, fast drying two component waterproofing membrane specifically designed for use under tiles. The product has been uniquely formulated with synthetic microfibres to increase its strength and eliminate the need for a separate reinforcement mat. Ardex WPM 002 is based on the most advanced acrylic polymer technology, and is totally resistant to re-emulsification.

Ardex WPM 002 is flexible, safe to use, low in odour, and is fully compatible with polymer modified tile adhesives. Ardex WPM 002 is one of the fastest drying acrylic membranes on the market – normally ready to tile in 16-24 hours @ 23°C.

WPM 002 meets the Green Building Council of Australia Green Star IEQ-13 requirements for Architectural Sealant when tested in accordance with SCAQMD Method 304-91 Determination of Volatile Organic Compounds (VOC) in Various Materials as referenced by South Coast Air Quality Management Division (SCAQMD) Rule 1168.

FEATURES/BENEFITS

Fast drying Ardex WPM 002 can be tiled over in 16-24 hours, or 4 hours @ 23°C/50% RH in non critical areas*.

Features benefits

- Liquid reinforced: Excellent strength, eliminates need for reinforcing mat.
- Flexible: Accommodates normal building movement.
- Advanced acrylic: Will not re-emulsify.
- Designed for tiling: Fully compatible with ABA/Ardex tile systems adhesives.
- Water based, safe to use, low odour and easy cleaning for undertile waterproofing in shower recesses by independent testing authority.
- Excellent exterior.
- Conforms to the requirements of AS/NZ 4858: 2004 Wet Area Membranes (Ref: CSIRO Report 3879)

*Critical areas include areas where the membrane is applied at greater than 0.5mm or over impermeable substances such as over bond breakers or incorporating other reinforcement. Longer drying times are necessary in these areas.

APPLICATION RANGE

Performance levels
Commercial and residential.

Location
Internal and external wet areas, balconies, decks, and other areas that will be tiled or otherwise protected from regular foot traffic.

Surfaces
Walls and floors.

Substrates

Concrete	Cured for min. 28 days or sealed when set with one coat Ardex WPM 300 (HydrEpoxy 300) at a coverage rate of 3.0 square metres per litre and allowed to cure overnight. Wet concrete should be allowed to dry thoroughly or sealed with one coat of Ardex WPM 300 as above.
Renders and screeds	Cured for min. 7 days or sealed when set with one coat Ardex WPM 300 at a coverage rate of 3.0 square metres per litre and allowed to cure overnight. Wet render should be allowed to dry thoroughly or sealed with one coat of Ardex WPM 300 as above.
Fibre cement	Wet area grade only.
Plasterboard	Wet area grade only.
Plywood	Structural plywood (PAA branded) or marine grade or other wet area grade only. Not recommended for external use (refer Ardex).
Particleboard	Wet area grade, internal use only (special preparation is required – contact Ardex). Not recommended for external use (refer Ardex).
Permanent Immersion	In conditions of permanent immersion, it is recommended that WPM 002 must be covered with tiles for full immersion applications.

Contact Ardex for use over existing membranes, covering materials, and any other substrates not listed.

SPECIFICATION CLAUSE

Ardex WPM 002 (Superflex Two Part)
The waterproofing membrane shall be Ardex WPM 002, a two component cementitious acrylic modified fibre reinforced membrane formulated to provide a tough, long lasting water barrier under tiling systems.

PACKAGING

Two component: 20kg (approx 20 litres) liquid pail/ 2 x 10kg bags powder.

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 26 of 125
Building Consent BC200635.02
Received 20/12/2021

TABLE 1

	Thickness per coat		Total dry film thickness (2 coats)	Theoretical coverage		Per unit
	Dry film	Wet film		Per coat	For 2 coats	
FLOORS	0.6mm	0.9mm	1.2mm	32m²	16m²	40kg kit
WALLS	0.4mm	0.6mm	0.8mm	48m²	24m²	40kg kit

SHELF LIFE

12 months when stored in the original unopened packaging, in a dry place at 23°C. Do not store in direct sunlight. Replace lid tightly after use. Use remaining contents from part used containers within 3 months.

COVERAGE

Two coats are recommended for an effective waterproof membrane. Coverage will vary depending on the porosity of the surface.

One 40kg kit will cover approximately 16-24m (based on two coats) depending on area requirements between wall and floor surfaces to be treated.

DRYING TIMES

Curing time will vary depending on temperature and humidity.

Recoat time

1-2 hours (23°C/50% RH) between first and second coats. Alternatively, if a polyester mat is used between coats then the second coat can be applied whilst the first coat is still wet.

Dry through

The slowest drying areas are those where the membrane has been applied over a silicone bond breaker, eg. wall and floor junctions. The membrane cannot be tiled over until these critical areas are completely dry.

Ardex WPM 002 membrane is totally dry in 16 hours at 23°C/50% RH but can take up to 24 hours at 10°C / 50% RH in corners or for thick films.

In areas where bond breakers or additional reinforcement are not used, Ardex WPM 002 can be tiled over after 4 hours at 23°C / 50% RH.

Fully cured

The shower should not be used until the membrane has reached its full strength. Normally Ardex WPM 002 membranes are fully cured after 3 days at 23°C, or after 5 days at 10°C.

Drying times will vary depending on humidity, surface temperature and surface porosity.

Do not apply on substrates where the surface temperature is below 10°C or above 35°C.

CLEANING

Wash hands, brushes, rollers, etc, with water while the membrane is still fresh. Remove cured material with mineral turpentine.

SAFETY PRECAUTIONS

Do not use the product in the following situations:

- Areas subject to negative hydrostatic pressure or rising damp, unless treated with Ardex WPM 300.
- Where the substrate is wet – wet surfaces can be sealed with one coat of Ardex WPM 300 at a coverage rate of 3.0 square metres per litre and allowed to cure overnight.
- Where rain is imminent.
- Where the membrane will be left exposed and subjected to regular foot traffic.
- On glazed, glass or other totally impervious surfaces (eg. areas pre-treated with water repellants).
- Where the surface temperature is below 10°C or greater than 35°C.
- All floor areas must have adequate falls either built into the substrate or achieved with a sand/cement screed prior to application of the Ardex WPM 002.

For substrates or situations other than those listed contact Ardex.

SAFETY DATA

Ardex WPM 002 Part A is non-hazardous. It may produce discomfort of the eyes, respiratory tract and skin. It should not be swallowed or inhaled. Avoid contact with skin and wear eye/face protection. In case of contact with eyes, rinse with plenty of water and contact a doctor or Poisons Information Centre.

Ardex WPM 002 Part B contains cement and is therefore hazardous. It may cause burns and serious damage to eyes. Do not breathe dust and avoid contact with eyes. Wear dust masks, goggles and gloves when handling. Keep container locked up and in a well ventilated place.

ADDITIONAL INFORMATION IS LISTED IN THE MATERIAL SAFETY DATA SHEET.

Building Consent BC200635.02
Received 20/12/2021
AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 27 of 125

Superflex Bathroom & Balcony - 2 Part
2 Part Undertile Waterproofing Membrane

APPLICATION

Apply Ardex WPM 002 by brush or roller. A medium nap (12–15mm pile) paint roller is recommended. New rollers should be dampened with water before being used for the first time.

For best results with a paint brush use a good quality, 50mm long bristle variety.

To achieve the required dry film thickness per coat application must consist of laying the product onto the surface and light finish the surface. Do not try to apply in the same manner as a building paint. A conventional building paint is normally applied at 25–40 micrometers wet film thickness while Ardex WPM 002 needs to be applied at between 0.6 and 0.9 mm per coat depending on product and application (Refer Table 1).

Critical areas:

INTERNAL WET AREAS

1. Construction should be in accordance with Australian 3740 - 2004 Waterproofing of wet areas within residential buildings.
2. All render and tile bed requirements should be completed before application of the membrane and tiles or other floor coverings should be direct bonded to the membrane.
3. Ensure wall and floor sheets are installed as per sheet manufacturer's recommendations.
4. Ensure suitable brick/concrete hobs are used (do not use timber), and that the top of the hob does not slope outwards.
5. Ensure that falls to the waste are min 1:60 (ie. approx. 30mm in 2m) before waterproofing. Ensure outlet pipes are fixed securely and that the waste or drainage flanges are recessed into the floor.
6. Avoid sheet joints in shower recess floor. Ensure that sheets are securely fixed to the wall at the bottom edge, and sheet joints are sealed with a neutral cured silicone sealant spread approximately 6mm on either side of the joint.
7. Treat nail and screw holes with neutral cure silicone sealant.
8. Seal the perimeters of taps, shower outlets and waste outlets with neutral cure silicone sealant.
9. Apply a bead of neutral cure silicone sealant to all horizontal and vertical corners, and spread to 6mm on either side of joint.
10. Apply a bead of neutral cure silicone sealant to the junction of the hob or angle and walls, and spread to 6mm on either side of joint.
11. Waste outlets shall incorporate a puddle flange or similar in accordance with AS3740 and the top surface shall be set flush with the surface to which the membrane is to be applied. A bead of neutral cure silicone shall be applied across the intersection of the puddle flange and the screed/ floor.
12. Apply the membrane to the entire shower recess floor and down into waste or drainage flange. Apply the membrane over the hob and at least 150mm beyond the outside edge of the hob (ideally to entire wet area floor).
13. Apply the membrane 1800mm up the walls or to the height of the shower rose within the shower recess.
14. Install the shower screen to inside edge of the hob.

BALCONIES AND DECKS

1. Ensure that the deck is constructed with falls to edge/drains of min 1:100 (ie. 20mm in 2m) or else achieve the fall with a sand/cement screed.
2. Ensure a min set down (step down) of 50mm to the finished floor level (ie. top of tiles).
3. Ensure suitable flashing is installed, ideally prior to the installation of the balcony screen/sliding door.
4. Treat any sheet joints with a neutral cure silicone

Fig.1 – Shower recess – critical areas

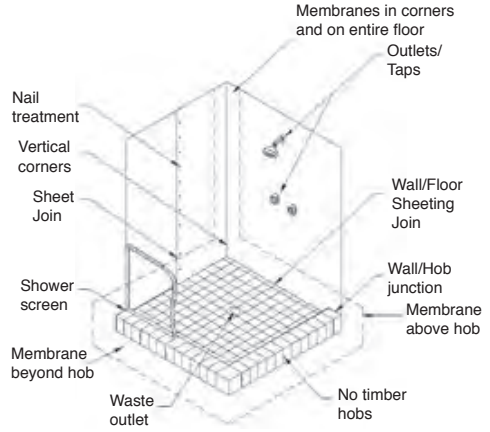
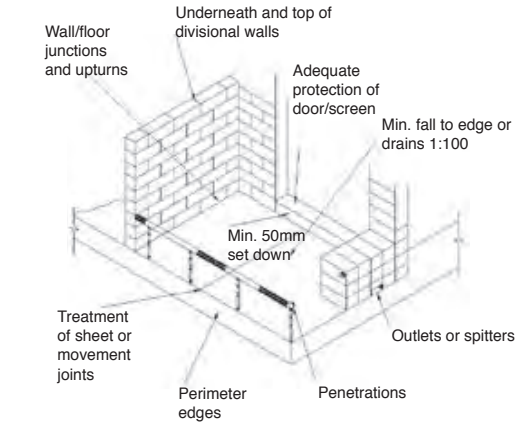


Fig.2 – Balcony – critical areas



AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 28 of 125
Building Consent BC200635.02
Received 20/12/2021

prior to waterproofing.

5. Prepare and seal all wall/floor junctions with a bead of neutral cure silicone.
6. Apply the membrane up the step down and as far up underneath the screen door flashing as possible (ideally waterproof prior to installing door).
7. Where possible, apply the membrane prior to building divisional walls.
8. Apply the membrane to the entire balcony floor and at least 50mm up the wall above the top surface of the finished tiles and finished below the wall drainage vents.
9. Apply the membrane to the top of the parapets and divisional walls, or else install suitable metal capping.
10. Apply the membrane down over the front edge of the balcony onto the drip rail.
11. Carefully seal any gaps around balcony penetrations prior to applying the membrane.
12. Apply the membrane down into outlets and drains, ensuring excess material is removed.
13. Ensure all weep holes are above the membrane application area.

APPLICATION NOTES

Surface preparation

- Ensure all surfaces are structurally sound and totally dry. The pores of concrete surfaces should be open (absorbent surface). All sheet substrates must be securely fixed in accordance with the manufacturers instructions.
- Falls to outlets of at least 1:60 or approx. 30mm in 2m (wet areas) or 1:100 externally, must be achieved prior to tiling.
- The surface to be coated should be free from dust, oil, paint, curing compounds and any other contaminating materials.
- Damaged concrete should be repaired (leveled) and surface defects including all cracks and sharp protrusions should be treated prior to the application of the membrane.
- Remove laitance on concrete or screeds by mechanical means.
- Highly dense (>40MPa) or steel trowelled concrete should be roughened by suitable mechanical means (shot blasting, grinding, etc).

Priming

The primer is a critical part of the waterproofing system. Apply one coat of Ardex WPM 265 (Sheltercoat/Superflex Water Based Primer) by brush or roller to all areas to be waterproofed including the floor waste. Allow the primer to be completely dry prior to the application of the Ardex WPM 002 membrane. This will take around 20-30 minutes depending upon weather conditions and porosity of the substrate. Coverage is approximately 6m^2 per litre. Plastic (eg. PVC) pipes should be primed with a solvent based plumbers pink primer. Prime metal surfaces with a suitable metal primer such as epoxy polyamide primer.

GENERAL APPLICATION

Crack preparation

Cracks <2mm:

Clean and remove any loose particles in the crack. Prime the crack and adjacent area carefully with Ardex WPM 265 and allow to dry before applying two coats of Ardex WPM 002 membrane, in a band at least 200mm wide equidistantly across the crack, along the length of the crack.

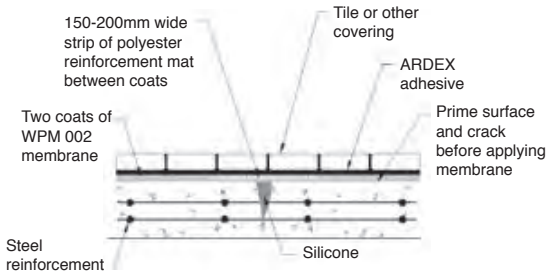
Cracks 2-6mm:

(Refer Fig. 3) prepare and prime the crack as above. Apply a bead of neutral cure silicone into the crack and extend it 6mm either side. Apply a 300mm wide band of Ardex WPM 002 equidistantly across the crack along the entire length of the crack. Place a 190mm wide band of Ardex “Deckweb” polyester woven cloth reinforcement over the applied membrane. Thoroughly wet out the cloth and remove all creases in, or air pockets under the mat. Immediately apply a second coat to completely fill the mat.

Cracks >6mm:

Contact your local Ardex representative.

Fig.3 Crack Treatments



Building Consent BC200635.02
Received 20/12/2021
AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 29 of 125

Superflex Bathroom & Balcony - 2 Part
2 Part Undertile Waterproofing Membrane

Movement/construction joints

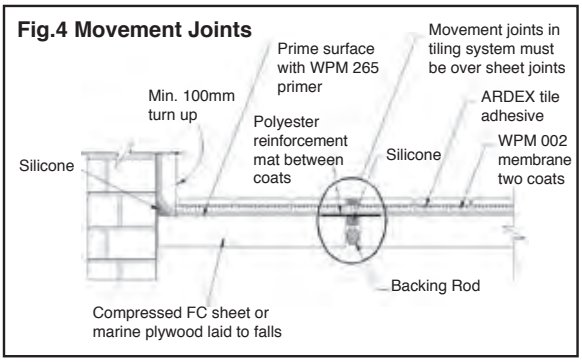
Movement joints (<6mm)

Clean and prime the joint before filling it with a bead of neutral cure silicone and extending it 6mm each side of joint. Apply a 300mm wide band of Ardex WPM 002 equidistantly across the crack along the entire length of the crack. Place a 190mm wide band of Ardex "Deckweb" polyester woven cloth reinforcement over the applied membrane. Thoroughly wet out the cloth and remove all creases in, or air pockets under the mat. Immediately apply a second coat to completely fill the mat.

Construction joints (>6mm)

Use the same procedure as above, but replace the reinforcing mat with 120mm of Ardex Coving Bandage. Note: if tiling, movement joints should be taken to the surface of the tiles. Fill the joints between the tiles immediately above the movement joints with an appropriate joint sealant. (Refer Fig.4)

Fig.4 Movement Joints



Corners and coving areas

After priming with Ardex WPM 265 and allowing to dry, apply a generous bead (16mm) of neutral cure silicone sealant in coving areas and corners. (Refer Fig.5) Smooth over the silicone so that it extends 8mm up the wall and 8mm over the floor and allow to touch dry.

Apply a first coat of Ardex WPM 002 to the area and allow the membrane to dry.

Apply a second coat ensuring that excess product is removed from the junction (the final dry film thickness should be around 1.2mm) Alternatively, if a polyester reinforcement mat is used between coats then the second coat can be applied as soon as the mat is fully bedded into the first coat.

WALL/FLOOR JUNCTION

After priming with Ardex Superflex WPM 265 and allowing to dry, apply a generous bead (16mm) of neutral cure silicone sealant to seal all junctions between two substrates. Smooth over the silicone so that it extends 8mm up the wall and 8mm over the floor and allow to touch dry. Place a 190mm wide band of Ardex "Deckweb" polyester woven cloth reinforcement over the applied membrane. Thoroughly wet out the cloth and remove all creases in, or air pockets under the mat. Immediately apply a second coat to completely fill the mat. The Ardex WPM 002 should be applied to at least 150mm up the wall surfaces as per the recommendations for the application of Ardex WPM 002 to floors.

Walls

Two coats of Ardex WPM 002 are required to achieve a minimum total dry film thickness of 0.8mm.

After priming with Ardex Superflex WPM 265 and allowing to dry, apply two coats of Ardex WPM 002 (to achieve a minimum dry film thickness of 0.8mm) in two opposite directions. Wall sheets joints should be treated with a neutral cure silicone, PVC duct tape or base jointing compound. In balcony situations take the membrane up underneath any existing cover flashing or install appropriate flashing. Allow the first coat to dry before applying the second coat.

Floors

Two coats of Ardex WPM 002 are required to achieve a minimum total dry film thickness of 1.2mm. The flooring recommendations should be extended at least 150mm up all perimeter walls.

Prime the surface with Ardex WPM 265 water based primer and allow to dry.

Apply the first coat over the primed surface and allow it to dry (1-2 hours at 23°C, 50% RH) before applying a second coat in an opposite direction. In shower recesses a drainage flange must be installed on all timber/sheeted floors, and are strongly recommended on all other substrates. Where possible rebate the flange into the floor. Seal the perimeter of the flange with neutral cure silicone treatment. If a flange is not installed the membrane must be applied down into the pipe. (Refer Fig.5) Allow the membrane to dry completely before tiling. Refer drying times above.

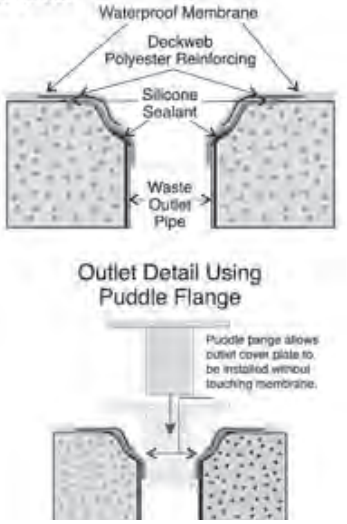
Waste outlet

Prime the surface with Ardex WPM 265 and allow to dry. Surfaces of outlet flange must be primed with an appropriate primer.

Apply Ardex WPM 002 over the adjacent floor surface extending down into the waste outlet pipe overlapping the pipe surfaces by at least 30mm. Place Ardex "Deckweb" polyester woven cloth reinforcement over the applied membrane. Thoroughly wet out the cloth and remove all creases in, or air pockets under the mat. Immediately apply a second coat to completely fill the mat. (Refer Fig. 5).

Building Consent BC200635.02
Received 20/12/2021
AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 30 of 125

Fig.5 – Waste outlet



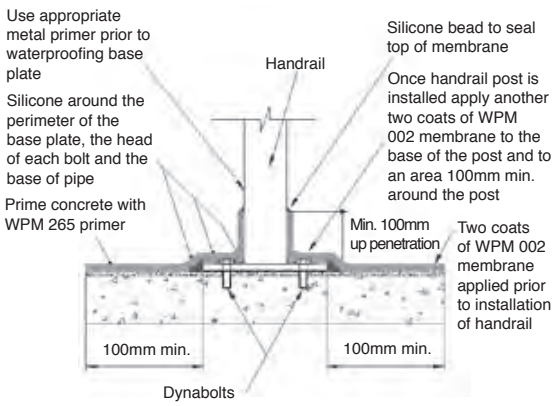
Balcony penetrations (Refer Fig.6)

All upstands are to be mechanically fixed through the membrane, which must be fabricated with a base plate flange.

Prime the metal with an appropriate metal primer such as an epoxy polyamide primer and allow to dry. Apply a 10mm bead of neutral cure silicone around the perimeter of the penetration. Apply the first coat of Ardex WPM 002 on the substrate and the flanged metal.

Allow first coat to dry before applying a second coat ensuring a finished dry film thickness of no less than 1.2mm is achieved. Place a suitable flashing collar around the penetration sealing it with a suitable sealant.

Fig.6 – Balcony penetration



Tiling systems

It is advisable to conduct a flood test of the shower once the membrane has cured (normally after 48 hours), and before the tiling commences. A broad range of Ardex tile adhesives can be used over Ardex Superflex membranes. Contact Ardex or your nearest Ardex stockist for advice on the most suitable system.

QUALITY PRODUCT

Ardex WPM 002 is manufactured and tested to Ardex procedures which are maintained in accordance with Quality System Standard ISO 9001.

USER NOTES

The technical details and recommendations contained in this data sheet are given in good faith and represent the best of our knowledge and experience at the time of printing. It is the responsibility of the user to ensure that the product is used in accordance with Ardex instructions and in applications for which they are intended.

TECHNICAL DATA

Ardex WPM 002
Characteristics of components

Form & Colour	Liquid: white, medium viscosity Powder: off white
Characteristics of mixed product	
Mixing Ratio	1:1 by weight
SG of mixed product	1.44kg/litre
Non Volatile Matter	77±1%
Colour	light grey/green
Characteristics of cured membrane	
Shore A hardness ASTM D2240	
– dry film	85 – 90
– wet film	75 – 80
Tensile Strength	
7 days dry AS1145	1.7 MPa
Full Cure 28 days:	2.9 MPa
Elongation at Break	
7 days dry AS1145	332%

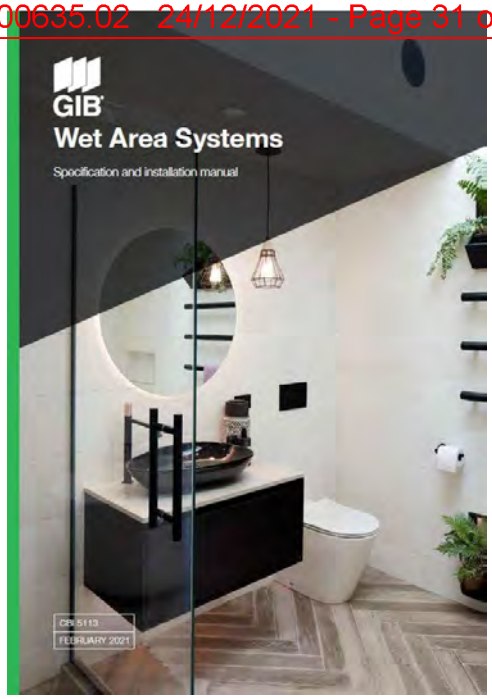
NOTE: Most of the tests have been carried out in the Ardex laboratory under standard conditions (23±2°C, 50±5% RH)

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 31 of 125

Building Consent BC200635.02
Received 20/12/2021

BRANZ Appraised
Appraisal No. 427 [2021]

GIB® WET AREA SYSTEMS



Appraisal No. 427 (2021)

This Appraisal replaces BRANZ Appraisal No. 427 (2007)

BRANZ Appraisals

Technical Assessments of products for building and construction.

Winstone Wallboards Ltd
PO Box 12 256
Penrose
Auckland 1642
Tel: 09 633 0100
Email: info@gib.co.nz
Web: www.gib.co.nz

BRANZ
1222 Moonshine Rd,
RD1, Porirua 5381
Private Bag 50 908
Porirua 5240,
New Zealand
Tel: 04 237 1170
branz.co.nz

Product

1.1 GIB® Wet Area Systems are for the interior lining of timber and steel-framed walls and ceilings in wet areas such as bathrooms, laundries, kitchens and toilets where a water-resistant lining material is desirable.

Scope

2.1 GIB® Wet Area Systems have been appraised for use as a wet area wall and ceiling lining in buildings within the following scope:

- on timber-framed walls and ceilings within the scope limitations on NZS 3604; or,
- on steel-framed walls and ceilings within the scope limitations of NASH Standard Part 2, or,
- on timber and light gauge steel-framed walls and ceilings subject to specific design.

Building Regulations

New Zealand Building Code (NZBC)

3.1 **In the opinion of BRANZ, GIB® Wet Area Systems, if designed, used, installed and maintained in accordance with the statements and conditions of this Appraisal, will meet or contribute to meeting the following provisions of the NZBC:**

Clause B1 STRUCTURE: Performance B1.3.1, B1.3.2 and B1.3.4. GIB® Wet Area Systems meet the requirements for loads arising from self-weight and impact [i.e. B1.3.3 (a) and (j)]. See Paragraphs 8.1-8.3.

Clause B2 DURABILITY: Performance B2.3.1 (b) 15 years and B2.3.1 (c) 5 years. GIB® Wet Area Systems meet these requirements. See Paragraphs 9.1-9.5.

Clause E3 INTERNAL MOISTURE: Performance E3.3.4 and E3.3.5. GIB® Wet Area Systems meet these requirements. See Paragraphs 12.1-12.3.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. GIB® Wet Area Systems meet this requirement.

Readers are advised to check the validity of this Appraisal by referring to the Valid Appraisals listing on the BRANZ website, or by contacting BRANZ.

WAIMAKARIRI DISTRICT COUNCIL
AMENDED Plan and/or Specifications APPROVED
BC200635.02 23/12/2021 brendam
Change acrylic showers to tiled showers to both

Building Consent BC200635.02
Received 20/12/2021
AMENDMENT ISSUED BC200635.02 - 24/12/2021 - Page 32 of 125

Technical Specification

4.1 The GIB® plasterboards and accessories used in GIB® Wet Area Systems, and supplied by Winstone Wallboards Ltd are as follows:

GIB® Plasterboards

- **GIB Aqualine®** is a paper-bound, modified water-resistant gypsum-plaster core sheet lining material. It is available in 10 and 13 mm sheet thicknesses. Sheets are available in various edge profiles and lengths from 2,400 mm to 4,800 mm. Refer to Table 1. The nominal sheet weights are 8 kg/m² and 11 kg/m² for 10 mm and 13 mm thick sheets respectively. GIB Aqualine® face paper is green in colour.
- **GIB Toughline® Aqua** is a paper-bound, modified water-resistant gypsum-plaster core sheet lining material. It is available in a sheet thickness of 13 mm. Sheets are available in various edge profiles and lengths from 2,400 mm to 3,000 mm. Refer to Table 1. The nominal sheet weight is 11.4 kg/m². GIB Toughline® Aqua face paper is mauve in colour.
- **GIB Weatherline®** is an exterior-grade, glass-fibre fleece-wrapped modified-gypsum core sheet material. The product is available in 10 mm and 13 mm thicknesses and a board width of 1,200 mm. Standard sheet lengths are 2,450, 2,700 and 3,000 mm. Custom sheet lengths are also available. The nominal sheet weights are 9 kg/m² and 11.5 kg/m² for 10 mm and 13 mm thick sheets respectively.

Table 1: GIB® Wet Area Plasterboard Available Sheet Sizes

Plasterboard Type	Sheet Thickness (mm)	Sheet Edge Profile	Sheet Width (mm)	Sheet Length (mm)					
				2,400	2,450	2,700	3,000	3,600	4,800
GIB Aqualine®	10	TE/TE	1,200	✓		✓	✓	✓	
		TE/SE	1,200	✓					✓
		TE/SE	1,350	✓				✓	
	13	TE/TE	1,200	✓		✓	✓	✓	
GIB Toughline® Aqua	13	TE/TE	1,200	✓		✓	✓		
GIB Weatherline®	10	SE/SE	1,200		✓	✓	✓		
	13	SE/SE	1,200			✓	✓		

TE = Tapered Edge SE = Square Edge

Fastenings

- GIB® Grabber® High Thread Drywall screws for fixing to timber: 6 g x 25 mm and 32 mm.
- GIB® Grabber® Self Tapping Drywall screws for fixing to light gauge steel: 6 g x 25 mm and 32 mm.

Adhesive and Sealants

- GIBFix® One (Acrylic).
- GIBFix® All-Bond (Solvent).

GIB® Accessories

- Corner Support Angle - GIBFix® Angle or GIB® Rondo® NZ18. Minimum 32 x 32 x 0.55 mm galvanised metal angle.

GIB® Jointing Compounds

- As specified in the GIB® Wet Area Systems and GIB® Site Guide Technical Literature.

Readers are advised to check the validity of this Appraisal by referring to the Valid Appraisals listing on the BRANZ website, or by contacting BRANZ.

Building Consent BC200635.02
Received 20/12/2021

AMENDMENT ISSUED BC200635.02 - 24/12/2021 - Page 33 of 125

BRANZ Appraised
Appraisal No. 427 [2021]

4.2 System components and accessories for the GIB® Wet Area Systems, which are supplied by the building contractor are:

Waterproofing

- A waterproofing system complying with AS/NZS 4858.

Finishes

- Finishes such as tiling, flexible sheet vinyl, paints and wallpapers have not been assessed and are outside the scope of this Appraisal.

Handling and Storage

5.1 The best results are achieved when GIB® plasterboards are treated as a finishing material and protected from damage. Sheets must be stacked flat and kept dry at all times. For limits on stack heights see the GIB® Site Guide. Sheets must be carried on edge and not dragged.

5.2 All accessories must be kept dry.

Technical Literature

6.1 Refer to the Appraisals listing on the BRANZ website for details of the current Technical Literature for GIB® Wet Area Systems. The Technical Literature must be read in conjunction with this Appraisal. All aspects of design, use, installation and maintenance contained in the Technical Literature and within the scope of this Appraisal must be followed.

Design Information

General

7.1 GIB® Wet Area Systems provide a water-resistant lining as a base for finishing systems in wet areas such as bathrooms, toilets, laundries and kitchens. The typical finishes are ceramic tiles and flexible sheet vinyl to walls, and paint and wallpaper to walls and ceilings. [*Note: GIB Weatherline® is a suitable substrate for ceramic tiles and sheet vinyl. For paint or wallpaper finishes use GIB Aqualine® or GIB Toughline® Aqua.]*

7.2 GIB® Wet Area Systems must not be used in the following situations:

- For bracing applications in shower areas or adjacent baths [See Paragraphs 7.4 and 8.2].
- In areas of high humidity [above 90% RH] or continually wet areas such as group showers, steam rooms, or swimming pools.
- Installed over a vapour barrier.
- Applied directly to masonry, concrete or solid plaster.
- Applied over other sheet lining materials.
- Used externally of the building envelope.
- Exposed to temperatures of 52°C or greater for prolonged periods. [Refer to appliance and fitting manufacturers for installation details.]

7.3 GIB Aqualine® may be substituted for some other GIB® plasterboard products in specific GIB® Bracing Systems, GIB® Fire Rated Systems and GIB® Noise Control Systems. Refer to the relevant systems technical literature for details.

Readers are advised to check the validity of this Appraisal by referring to the Valid Appraisals listing on the BRANZ website, or by contacting BRANZ.

Building Consent BC200635.02
Received 20/12/2021

AMENDMENT ISSUED BC200635.02 - 24/12/2021 - Page 34 of 125

BRANZ Appraised
Appraisal No. 427 [2021]

Wet Areas

7.4 Wet areas are spaces where sanitary fixtures and sanitary appliances are located such as bathrooms, toilets, laundries and kitchens. There are two general categories of wet areas as follows:

- Water Splash – These are areas subject to intermittent splashing of water such as around baths, vanities, tubs and sinks.
- Shower Areas – These are areas subject to frequent and heavy water splash such as enclosed showers, unenclosed shower zones and showers over baths.

7.5 Both the above wet area categories must be finished with surfaces and joints that are impervious and easily cleaned. In addition, shower areas must be waterproofed. This can be achieved using proprietary rigid shower lining systems, flexible vinyl shower wall finishes, or tiling. Tiled shower areas must include a wet area waterproofing membrane system under the tiles.

Intertenancy Walls – Wet Areas

7.6 Intertenancy construction that incorporates fire resistance and noise control must be protected from water splash. In shower areas, GIB® Wet Area plasterboards must not be substituted for other GIB® plasterboards but must be an extra lining layer. Refer to the Technical Literature.

Tiling

7.7 GIB® Wet Area Systems are suitable as a substrate for tiling up to the following weights:

- 10 mm GIB Aqualine® and GIB Weatherline® - up to 26 kg/m^2.
- 13 mm GIB Aqualine®, GIB Toughline® Aqua and GIB Weatherline® - up to 40 kg/m^2.

[Note: Most ceramic and porcelain wall tiles weigh less than 20 kg/m^2. For further information on tiling consult the BRANZ Good Practice Guide – Tiling.]

Framing

7.8 Supporting framing must comprise one of the following, subject to the minimum sizes, dwang centres and all other frame requirements of GIB® Wet Area Systems Technical Literature:

- Timber framing must be designed and constructed in accordance with NZS 3604, or to a specific design using NZS 3603 and AS/NZS 1170. Refer to Paragraph 15.2 regarding recommended moisture content of timber framing.
- Steel framing must be designed and constructed in accordance with NASH Standard Part 2, or to a specific design in accordance with AS/NZS 1170.

Structure

Bracing

8.1 GIB Aqualine®, GIB Toughline® Aqua and GIB Weatherline®can be used in GIB EzyBrace® Systems. Refer to BRANZ Appraisals Nos. 928 (2016) and 1048 (2019).

8.2 GIB Wet Area Systems must not be used for bracing in shower areas or behind baths.

Impact Resistance

8.3 GIB® plasterboards provide adequate resistance to soft body impact, based upon experience of use in domestic and light commercial applications. GIB Toughline® Aqua is recommended by Winstone Wallboards Ltd where higher impact resistance is desired.

Readers are advised to check the validity of this Appraisal by referring to the Valid Appraisals listing on the BRANZ website, or by contacting BRANZ.

Building Consent BC200635.02
Received 20/12/2021

AMENDMENT ISSUED BC200635.02 - 24/12/2021 - Page 35 of 125

Durability

Serviceable Life

9.1 GIB® Wet Area Systems have a serviceable life of at least 15 years as a fully protected shower or water splash lining. As a general wall and ceiling lining, GIB® Wet Area Systems will have a serviceable life in excess of 50 years. The ability of GIB® plasterboards to remain durable is dependent on being protected and remaining dry in service, and being maintained in accordance with this Appraisal.

Maintenance

9.2 The building must be maintained weathertight and all lining systems protected from internal and external moisture.

9.3 Finishes to water splash and shower areas, including tiles, grout, waterproof membranes, sealants and flexible sheet vinyl must be checked to ensure the integrity of the system is maintained. They must be repaired or replaced if necessary. When repairing or replacing finishes, the GIB® plasterboard substrate must be checked for defects and repaired or replaced, as required.

9.4 For flexible sheet vinyl, particular attention must be paid to joints, especially at corners. Checks should be made to ensure the vinyl has not been punctured. Where damage has occurred, repairs must be made immediately.

9.5 Impact damage to GIB® plasterboard, resulting in small holes and cracks, may be patched, stopped and finished. For larger areas of damage, expert advice on repair must be sought from Winstone Wallboards Ltd.

Prevention of Fire Occurring

10.1 Separation or protection must be provided to the GIB® Wet Area Systems from heat sources such as fireplaces, heating appliances, flues and chimneys. Part 7 of NZBC Acceptable Solutions C/AS1 and C/AS2, and NZBC Verification Method C/VM1 provide methods for separation and protection of combustible materials from heat sources.

Fire Affecting Areas Beyond the Fire Source

Control of Internal Fire and Smoke Spread

11.1 The gypsum plasterboard used in GIB® Wet Area Systems without an applied paint or wallpaper finish has been tested in accordance with ISO 5660 and achieved a Material Group Number of 1-S.

11.2 The gypsum plasterboard used in GIB® Wet Area Systems with an untested applied finish of a waterborne or solvent borne paint coating ≤ 0.4mm thick achieves a Material Group Number of G2-S in accordance with Table A1 of NZBC Verification Method C/VM2.

11.3 A lower Material Group Number may be achieved when used with a tested finishing system. The Material Group Number for the complete lining system must be obtained from the supplier of the finish product or system.

Fire Resistance Ratings (FRRs)

11.4 GIB® Wet Area plasterboards, when used as part of GIB® Fire Rated Systems, can be used to provide FRRs as determined by NZBC Acceptable Solutions C/AS1 and C/AS2 and NZBC Verification Method C/VM2. Refer to BRANZ Appraisal No. 289 (2018) and relevant technical literature.

Internal Moisture

12.1 When installed in accordance with this Appraisal, GIB® Wet Area Systems will provide wall surfaces adjacent to sanitary fixtures and sanitary appliances that are impervious and easily cleaned.

12.2 The construction methods in the Technical Literature meet with the internal moisture requirements of the NZBC Acceptable Solution E3/AS1.

12.3 To minimise internal condensation, adequate levels of ventilation and thermal resistance must be provided to all spaces where moisture may be generated.

Readers are advised to check the validity of this Appraisal by referring to the Valid Appraisals listing on the BRANZ website, or by contacting BRANZ.

Building Consent BC200635.02
Received 20/12/2021
AMENDMENT ISSUED BC200635.02 - 24/12/2021 - Page 36 of 125

BRANZ Appraised
Appraisal No. 427 [2021]

Airborne and Impact Sound

13.1 GIB® Wet Area plasterboards, when used as part of GIB® Noise Control systems, can be used to provide acoustic ratings as required by NZBC Acceptable Solution G6/AS1. Refer to BRANZ Appraisal No. 394 (2017) and relevant technical literature.

Installation Information

Installation Skill Level Requirement

14.1 Installation of GIB® Wet Area Systems must be completed by, or under the supervision of, a Licensed Building Practitioner with the relevant Licence Class, in accordance with the Technical Literature and this Appraisal.

General

15.1 GIB® Wet Area Systems must be installed in accordance with the Technical Literature. For inspection, reference must be made to the Technical Literature.

Framing

15.2 To achieve an acceptable decorative finish, the walls must not be lined unless the moisture content of timber framing is less than 18%. Winstone Wallboards Ltd recommend a moisture content of 8–12% where buildings are to be air conditioned or centrally heated.

Cutting

15.3 GIB® Wet Area plasterboards are easily cut by scoring the face paper with a sharp short-bladed trimming knife, and then snapping the plasterboard away from the cut face and cutting the back paper or by sawing. Use of a metal straightedge facilitates clean straight cuts. Cut edges can be tidied up by using a knife. Paper dags should be removed.

Fixing Sheets

Non-Tiled Areas

16.1 GIB® Wet Area plasterboards may be installed vertically or horizontally. Sheets are fixed with GIB® Grabber® screws at 300 mm centres around the perimeter of the sheet, and with GIBFix® adhesive on all intermediate studs and dwangs. Adhesive must not be used under fasteners. A 5-10 mm gap must be left between the floor and the bottom of the sheet.

Tiled Areas

16.2 Control joints must be provided at maximum 4 m centres.

16.3 Internal corners in shower areas must be reinforced with a minimum 32 x 32 x 0.55 mm galvanised metal angle (i.e. GIBFix® Angle or GIB® Rondo® NZ18) prior to lining the walls.

16.4 GIB® Wet Area plasterboards may be installed vertically or horizontally. Sheets are fixed with GIB® Grabber® screws at 150 mm centres to the perimeter of wall and to all intermediate studs. Adhesive must not be used in place of screws.

Ceilings

16.5 Supports of timber or steel battens or ceiling joists must be 450 mm centres for 10 mm GIB Aqualine®, or 600 mm centres for 13 mm GIB Aqualine® or GIB Toughline® Aqua.

16.6 GIB Aqualine® and GIB Toughline® Aqua sheets must be fixed with GIB® Grabber® screws at 600 mm centres around the perimeter of the ceiling and at 200 mm centre along supports. Alternatively, sheets are screw fixed at 600 mm centres along the supports and GIBFix® adhesive placed at 200 mm centres between the screws.

Readers are advised to check the validity of this Appraisal by referring to the Valid Appraisals listing on the BRANZ website, or by contacting BRANZ.

Building Consent BC200635.02
Received 20/12/2021
AMENDMENT ISSUED BC200635.02 - 24/12/2021 - Page 37 of 125

Penetrations and Sealants

17.1 All cut-outs for pipe penetrations must be made neatly using a hole saw. Cut-outs should be made approximately 12 mm diameter greater than the pipe.

17.2 A bead of sealant must be placed to the full thickness of the plasterboard sheet around all pipe penetrations, at bath rims and preformed shower bases and where an impervious junction is required at the floor/wall line.

17.3 In tiled areas, a bead of sealant 6 mm wide must also be placed to the full thickness of the tiles where the above situation occurs. The sealant manufacturer's technical literature must be followed for installation.

Jointing and Finishing

18.1 Jointing must be carried out in accordance with GIB® Site Guide Technical Literature.

18.2 Tiled shower areas must incorporate a waterproofing membrane over GIB® Wet Area Systems. Waterproofing membranes are outside the scope of this Appraisal and must otherwise be specified and approved.

Health and Safety

19.1 Dust resulting from the sanding of stopping and finishing compounds may be a respiratory irritant, and the use of a suitable facemask is recommended.

Basis of Appraisal

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

Tests

20.1 Winstone Wallboards Ltd GIB® plasterboards have been assessed for the following properties: MOR, MOE, paper tensile strength, paper shear strength, nail pull resistance, edge hardness, water resistance, hard and soft body impact tests and humidified deflection.

20.2 Cone calorimeter tests to ISO 5660 have been carried out by BRANZ.

Other Investigations

21.1 An assessment was made of the durability of the systems by BRANZ technical experts and found to be satisfactory.

21.2 Site inspections were carried out by BRANZ to assess the practicability of the installation of the systems, and to view completed installations.

21.3 The GIB® Wet Area Systems and GIB® Site Guide Technical Literature have been examined by BRANZ and found to be satisfactory.

Quality

22.1 Winstone Wallboards Ltd's manufacturing process and details of the quality and composition of the materials, have been examined by BRANZ and found to be satisfactory.

22.2 The quality management systems of Winstone Wallboards Ltd have been assessed and registered by TELARC as meeting the requirements of ISO 9001: 2015, Registration No. 581.

22.3 Winstone Wallboards Ltd is responsible for the quality of the product supplied.

22.4 The quality of the application and finish on site is the responsibility of the installation, stopping and finishing contractors.

22.5 Designers are responsible for the design of buildings.

22.6 Building owners are responsible for the maintenance in accordance with the instructions of Winstone Wallboards Ltd.

Readers are advised to check the validity of this Appraisal by referring to the Valid Appraisals listing on the BRANZ website, or by contacting BRANZ.

Building Consent BC200635.02
Received 20/12/2021
AMENDMENT ISSUED BC200635.02 - 24/12/2021 - Page 38 of 125

BRANZ Appraised
Appraisal No. 427 [2021]

Sources of Information

- AS/NZS 1170: 2002 Structural design actions - General principles.
- AS/NZS 2588: 2018 Gypsum plasterboard.
- BRANZ Good Practice Guide: Tiling (3rd edition), April 2015.
- ISO 5660-1:2002 Reaction-to-fire tests - Heat release, smoke production and mass loss rate - Part 1: Heat release rate (cone calorimeter method).
- NZS 3603: 1993 Timber Structures Standard.
- NZS 3604: 2011 Timber-framed buildings.
- Ministry of Business, Innovation and Employment Record of Amendments - Acceptable Solutions, Verification Methods and handbooks.
- The Building Regulations 1992.

Readers are advised to check the validity of this Appraisal by referring to the Valid Appraisals listing on the BRANZ website, or by contacting BRANZ.

Building Consent BC200635.02
Received 20/12/2021
AMENDMENT ISSUED BC200635.02 - 24/12/2021 - Page 39 of 125

BRANZ Appraised
Appraisal No. 427 [2021]

In the opinion of BRANZ, GIB® Wet Area Systems are fit for purpose and will comply with the Building Code to the extent specified in this Appraisal provided they are used, designed, installed and maintained as set out in this Appraisal.

The Appraisal is issued only to Winstone Wallboards Ltd, and is valid until further notice, subject to the Conditions of Appraisal.

Conditions of Appraisal

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

For BRANZ

Chelydra Percy
Chief Executive

Date of Issue:
15 February 2021

Readers are advised to check the validity of this Appraisal by referring to the Valid Appraisals listing on the BRANZ website, or by contacting BRANZ.

Building Consent BC200635.02
Received 20/12/2021

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 40 of 125

GIB®

Wet Area Systems

Specification and installation manual

WAIMAKARIRI DISTRICT COUNCIL
AMENDED Plan and/or Specifications APPROVED
BC200635.02 23/12/2021 brendam
Change acrylic showers to tiled showers to both

CBI 5113
FEBRUARY 2021

Building Consent BC200635.02
Received 20/12/2021
AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 41 of 125

NATIONAL SUPPORT

VISIT: Winstone Wallboards Limited
37 Felix Street, Penrose,
Auckland 1061, New Zealand
POST: PO Box 12 256, Penrose,
Auckland 1642, New Zealand
PHONE: +64 9 633 0100
EMAIL: info@gib.co.nz
WEB: gib.co.nz

GIB® HELPLINE

0800 100 442

Building Consent BC200635.02
Received 20/12/2021
AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 42 of 125

RESIDENTIAL AND NON-RESIDENTIAL APPLICATIONS. BATHROOMS, LAUNDRIES, TOILETS AND KITCHENS.

Protection from internal moisture is an important consideration when designing interior lining systems for homes, multi-unit apartments, educational, healthcare and commercial applications.

The New Zealand Building Code sets out minimum standards for wet area spaces in residential dwellings. However, often higher levels of performance and protection from internal moisture is demanded.

The GIB® Wet Areas System specification and installation manual provides internal lining options and details for specifiers, builders and building owners.

USE ONLY THE CURRENT SPECIFICATION

This manual supersedes the publication GIB Aqualine® Wet Area Systems March 2007. Winstone Wallboards Ltd accepts no liability for reliance upon publications that have been superseded.

If you are unsure whether this is the current publication, call the GIB® Helpline on 0800 100 442 or go to gib.co.nz

BEWARE OF SUBSTITUTION

The performance of GIB® Wet Area Systems requires accurate design detailing and construction practices. All GIB® Systems have been developed specifically for New Zealand conditions and independently tested, assessed or appraised, to ensure the required level of performance. It is important to use GIB® components where specified and to closely follow the specified design details and construction practices, to be confident that the required level of performance and quality is achieved on site.

BRANZ Appraised
Appraisal No.427 [2021]

Building Consent BC200635.02
AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 43 of 125

CONTENTS

Introduction	**5**
Design considerations	**6-11**
Where to use GIB® Wet Area linings	6
Benefits	6
Handling and storage	6
Limitations	6
Board substitution options	7
Penetrations and sealants	8
Renovations	8
Maintenance	8
Compliance with the NZ Building Code	9-11
Installation	**12-17**
Non-tiled walls – Timber Framing	12
Non-tiled walls – Steel Framing	13
Tiled walls – Timber Framing	14
Tiled walls – Steel Framing	15
Metal angles and maximum tile weights	16
Ceilings	17
Construction Details	**18-30**
Limitations	31
Use only the current specification	31
Substitution	31
Trademarks	31
Copyright	31

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 44 of 125
Building Consent BC200635.02
Received 20/12/2021

This publication

This publication is a best practice guide to the design and construction of wall and ceiling linings in wet areas with intermittent water exposure within residential and non-residential buildings, as covered by NZ Building Code Clause E3 Internal Moisture.

The information is designed to be helpful to designers, contractors and home-owners wishing to achieve a result that is easy to incorporate into modern design, simple and clear to construct, and that will satisfy the needs, requirements and expectations of both the NZ Building Code and the end user.

Wet areas in the home often require relatively frequent and expensive renovation or repair, often because of the ingress of water to the structure of the building.

To form a complete wet area system it is important to specify compatible materials and systems, designed to cope with conditions that are common in wet areas, and to ensure correct installation using best practice.

WET AREAS

Generally, wet areas are described as spaces to where fresh water is reticulated, such as bathrooms, toilets, laundries and kitchens. Within wet areas the following requirements apply;

1. NZBC Clause E3.3.4 states that wall surfaces adjacent to sanitary fixtures or sanitary appliances must be impervious and easily cleaned.
2. NZBC Clause E3.3.6 states that surfaces of building elements likely to be splashed must be constructed in a way that prevents water splash from penetrating behind linings or into concealed spaces.

NZ Building Code Clause E3 also refers to other requirements not covered in this publication, such as ventilation, condensation control and overflow management. Ongoing maintenance of wet areas is also important to maximise service life.

GIB AQUALINE®, GIB TOUGHLINE® AQUA AND GIB WEATHERLINE®

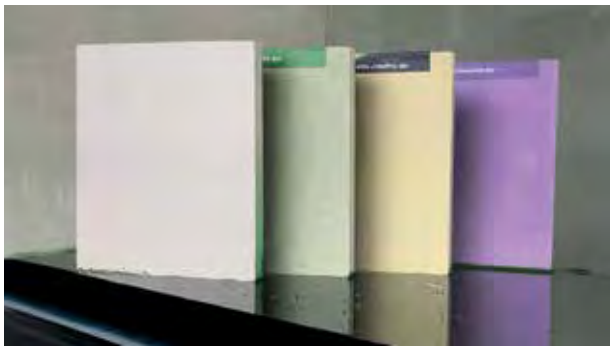
Although able to cope with infrequent short-term exposure, standard gypsum plasterboard will have a shortened life expectancy when frequently exposed to water or a high moisture environment.

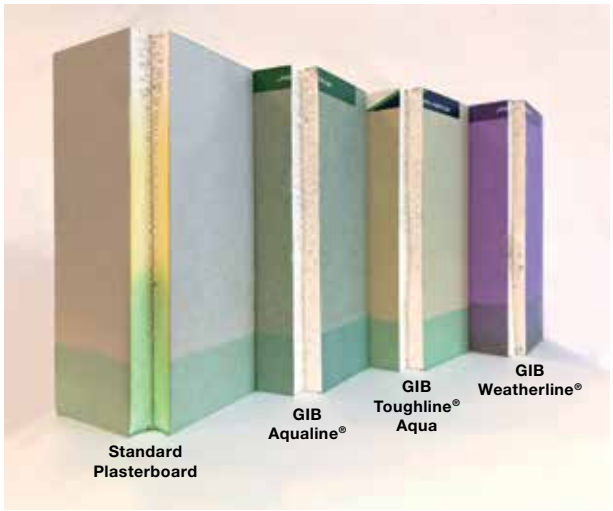
The NZ Building Code does not call for water resistant linings in wet areas but it is desirable to specify lining materials which will maintain their integrity longer when exposed more frequently to moisture, and to one-off events such as leaks or flooding.

GIB Aqualine®, GIB Toughline® Aqua and GIB Weatherline® feature a water-resistant polymer impregnated core, designed for wet area applications. These core formulations not only resist penetration of moisture through the lining into the framing behind, but also resist water “wicking” up the core, a common cause of long-term damage where a water-resistant lining has not been used.

WATER ABSORPTION TEST

The illustrations below show how GIB Aqualine®, GIB Toughline® Aqua and GIB Weatherline® compare with standard plasterboard after soaking for two-hours in green dye.





AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 45 of 125
Building Consent BC200635.02
Received 20/12/2021

WHERE TO USE GIB® WET AREA LININGS

In order to prolong the life expectancy of the space it is highly desirable to include wet area linings in situations where there is an increased risk of water or moisture damage. Applications include walls and ceilings in bath and shower rooms, and walls in laundries, toilets and kitchens.

BENEFITS

- Water resistant and durable linings help protect against water damage
- Proven substrate for paint, wallpaper, waterproofing membranes, tiles, sheet vinyl and rigid sheet shower linings
- Suitable for both residential and non-residential applications
- Dimensionally stable and an excellent substrate for ceramic tiles
- Conventional jointing methods
- Easy to cut and form openings
- Contains glass fibres and other additives to increase strength and fire resistance
- May be used in GIB® Bracing, GIB® Fire Rated and GIB Noise Control® Systems (see Compliance with the NZ Building Code, Clauses B1, C3 and G6). Consult the appropriate GIB® literature for installation details

HANDLING AND STORAGE

- GIB® plasterboard must be stored under cover, stacked flat and clear of the floor with sufficient support to avoid sagging
- GIB® plasterboard must be handled as a finishing material

LIMITATIONS

- GIB® wet area linings must not be used for bracing purposes in shower cubicles or above baths. For more information refer to page 9 of this manual
- Do not use GIB® wet area linings where exposed for extended periods to humidity levels above 90% RH, such as in group shower or steam rooms, or where exposed to moisture and chlorine rich environments such as in indoor swimming pools
- GIB® wet area linings used in a bathroom or other high humidity environment must not be directly applied to solid plaster (gypsum or cement), wood-based sheet linings or similar materials, masonry or concrete, without strapping or steel furring channels
- GIB® wet area linings must not be installed over a vapour barrier or a wall acting as a vapour barrier
- Cracked or damaged sheets must never be used
- GIB Aqualine® or GIB Toughline® Aqua must not be used in external applications
- GIB® plasterboard must not be exposed to temperatures in excess of 52°C for prolonged periods. Heat-generating devices may include halogen lighting, cooking elements, radiant heating, solid fuel exhausts and fire surrounds. Consult the appliance manufacturer for installation details

Table 1: GIB® Wet Area linings sheet dimensions and weights

Product	Sheet face colour	Thickness (mm)	Sheet width (mm)	Edge Type	Sheet length (mm)						Max. Weight (kg/m²)
					2400	2450	2700	3000	3600	4800	
GIB Aqualine®	Green	10	1200	TE/TE	■		■	■	■		8.0
			1200	TE/SE	■					■	
			1350	TE/SE	■				■		
		13	1200	TE/TE	■		■	■	■		11.0
GIB Toughline® Aqua	Mauve	13	1200	TE/TE	■		■	■			11.4
GIB Weatherline®	Purple	10	1200	SE/SE		■	■	■			9.0
		13	1200	SE/SE			■	■			11.5

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 46 of 125
Building Consent BC200635.02
Received 20/12/2021

BOARD SUBSTITUTION OPTIONS

Acceptable GIB Aqualine® alternatives	
10mm GIB Aqualine® can be replaced with:	10mm GIB Weatherline® 13mm GIB Toughline® Aqua
13mm GIB Aqualine® can be replaced with:	13mm GIB Weatherline® 13mm GIB Toughline® Aqua

GIB® Wet Area System construction details in this manual refer to the use of GIB Aqualine®, GIB Toughline® Aqua and GIB Weatherline® sheets may also be used in place of GIB Aqualine®.

FLEXIBLE SHEET VINYL – SHOWERS AND OTHER WET AREAS

- GIB Aqualine®, GIB Toughline® Aqua and GIB Weatherline® are suitable substrates for flexible vinyl wall finishes in wet areas of residential, commercial or institutional buildings
- Framing requirements and installation procedures are presented in this literature, except that the lining gap at the floor is no more than 5mm when a pencil cove detail is used
- The installation of galvanised steel reinforcing angles behind internal lining corners is recommended for sheet vinyl applications in showers or shower over bath situations
- The lining must be jointed and stopped to a paint quality finish (Level 4) – trowel marks can telegraph even through a commercial grade 2mm vinyl
- A commercial grade vinyl is recommended in commercial or institutional bathrooms and showers
- In areas directly exposed to liquid water, all joints in flexible sheet vinyl must be heat welded
- Installation of flexible vinyl must be carried out strictly in accordance with the specifications provided by the suppliers/ manufacturers of the vinyl

RIGID SHEET SHOWER LININGS

- The wall surface must be free of dust before installation of the lining
- Avoid lining joints as much as possible and where necessary flush with plaster to achieve a level surface
- Do not preseal or paint areas which are to be covered by the rigid shower linings
- The suppliers of thin (usually 2-3mm) and rigid acrylic shower linings commonly recommend direct adhesive fixing to wall linings using solvent-based adhesives
- Care must be taken to ensure that rooms are adequately ventilated
- Water temperature changes will cause movement of the thin acrylic sheet, which in turn will stress the adhesive and wall lining substrate
- Consult the supplier of the shower lining for full installation details
- Suppliers of rigid sheet acrylic shower linings recommend a minimum of 24 hours for the adhesive to cure fully prior to the shower being put into service

WATERPROOF MEMBRANE SYSTEMS AND TILING

- A waterproof membrane system must be applied to lining materials used as a substrate for ceramic tiles in a shower or shower over bath situation
- The wall surface in a shower or shower over bath situation is not complete and ready for tiling until coated with a waterproof membrane system over the lining and once penetrations for shower mixers, taps and associated fittings are sealed
- The installation of galvanised steel reinforcing angles behind internal lining corners is required for tiled wall applications in showers or shower over bath situations
- In-situ waterproofing membrane materials manufactured to AS/NZS 4858:2004 “Wet Area Membranes” are recommended and must be applied to manufacturer’s recommendations. Typically, these types of membrane systems are not suitable for paint and wallpaper finishes
- Waterproof membrane systems must be fully cured and dry prior to application of tiling adhesives
- Preformed sheet membranes are also available and may be more suitable where curing times or specialist skills are an issue
- The details shown in this manual are generic in nature. For accurate detailing, follow the specifications provided by the supplier of the proprietary waterproof membrane system

For further information on tiling consult the BRANZ Good Practice Guide – Tiling.

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 47 of 125
Building Consent BC200635.02
Received 20/12/2021

PENETRATIONS AND SEALANTS

As leaks and water ingress typically occur at junctions between building elements and at penetrations, it is essential that particular attention is given to these details at the time of installation. Lack of attention to detail can result in water damage that could remain undetected for a long time.

- Ensure that all cut-outs for pipe penetrations are made neatly, and slightly oversize, with a hole saw. These penetrations should be of a diameter no more than 12mm greater than that of the pipe
- Ensure shower mixer and tap penetrations are sealed with a proprietary flange system to prevent the passage of moisture into the wall cavity
- Sealants should be of a mould inhibiting type and be paintable. Neutral cure silicones will generally meet these requirements
- Surfaces should be dry and free from dust before application, a minimum of a 4mm joint width provided and the depth should not exceed the width
- Apply a bead of sealant to the full depth of the lining in the following locations:
  - Around all tap/pipe bodies
  - The gap between the bath rim and the bottom edge of the wet area lining
  - Between the upstand of preformed shower bases and the bottom edge of the lining
  - Where an impervious junction is required at the floor/wall line, carefully seal the gap between the bottom edge of the board and the finished floor. Leave a 5-10mm gap at the bottom of the wall lining for this purpose, ensuring the gap is free from dirt and dust
- Do not locate shower heads or taps on fire rated or intertenancy walls. Should this be unavoidable always use tested and approved proprietary penetration seals

RENOVATIONS

Bathrooms, kitchens and laundries are the most renovated rooms in the house, partly due to fashion considerations and partly because of damage sustained by ingress of water and moisture.

When renovating these rooms it is often easier and more cost-effective to remove the existing linings and replace them. This allows for a new start in the room and offers sound substrates for new surfaces such as tiling and painting, where otherwise flaking paint or damaged plasterboard may compromise good and sound finish or practice. At the very least re-lining will:

- Allow for inspection of framing where damage may have occurred and provide the opportunity to repair such damage
- Allow plumbing and electrics to be checked and altered or replaced where required
- Provide the opportunity to install thermal and acoustic insulation, water-resistant linings, and propriety plumbing penetration flange systems where appropriate
- Make the job easier

MAINTENANCE

Lack of maintenance is frequently the cause of premature and often expensive failure of components and building elements within wet areas.

It is important to regularly inspect and repair any potential problem before it becomes expensive to reinstate. Good maintenance should include:

- Ongoing ventilation. At the very least, good passive ventilation (e.g. window vents); but good active ventilation (e.g. extraction fans) of an appropriate size for the room is recommended
- Impervious coatings and surfaces should be checked for wear and damage and maintained and re-coated before ingress of water to the substrate occurs
- Regular cleaning with appropriate cleaners so that build-up of matter, such as mould, is well controlled
- Sealants at junctions and penetrations should be checked for adhesion on a regular basis and replaced where adhesion failure to substrates occurs
- Where pipe leaks have become evident, however small, they should be repaired promptly and any area around such leaks dried out completely before any other repairs are carried out

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 48 of 125
Building Consent BC200635.02
Received 20/12/2021

Compliance with the NZ Building Code

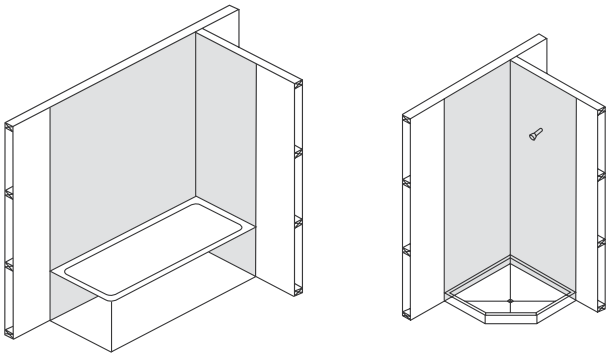
STRUCTURE – CLAUSE B1

The design and material specification for steel and timber framing used in GIB® Wet Area systems must be in accordance with the performance requirements of NZ Building Code Clause B1 (Structure).

Bracing elements are required to have a durability of 50 years. GIB® bracing elements are not to be located in shower cubicles or behind baths because of durability requirements, the likelihood of renovation, and practical issues associated with fixing bracing elements to perimeter framing members, such as at bath and shower tray locations.

Otherwise, GIB® Bracing Systems can be used in water-splash areas, provided these are maintained impervious for the life of the building.

GIB Aqualine®, GIB Toughline® Aqua and GIB Weatherline® can be used in place of GIB® Standard plasterboard in GIB® bracing elements. They can also be used in place of GIB Braceline® in GIB® bracing elements 900mm or longer, provided the perimeter of the element is fixed with GIB® Grabber 32mm x 6g screws at 100mm centres, using the GIB Braceline® corner fixing pattern. Refer to the GIB® Bracing System literature.



No bracing in the shaded areas.

DURABILITY – CLAUSE B2

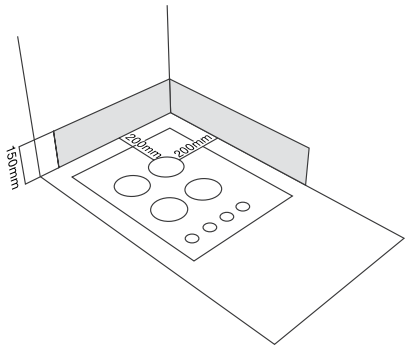
When installed and maintained in accordance with this literature, GIB® Wet Area systems tiled or vinyl covered have a serviceable life of at least 15 years. They comply with the requirements of NZ Building Code Clause B2 (Durability) for use in wet areas directly exposed to liquid water, e.g. showers, showers over baths and splash-backs.

When used as a general wet area lining and maintained under normal dry internal conditions, GIB® Wet Area Systems have a serviceable life of at least 50 years and comply with NZ Building Code Clause B2 (Durability) for use within toilets, kitchens, bathrooms and laundries not directly exposed to liquid water.

FIRE AFFECTING AREAS BEYOND THE SOURCE – CLAUSE C3

GIB® Fire Rated Systems provide passive fire protection in accordance with the requirements of NZ Building Code Clause C3. When GIB Aqualine® or GIB Toughline® Aqua is substituted into fire rated systems in place of the equivalent thickness GIB Fyreline®, the Fire Resistance Rating (FRR) of that system will be maintained.

The protection of combustible surfaces surrounding gas cooking appliances is covered by the latest version of AS/NZS 5601.1.



As a guide the following options are acceptable for wall surfaces within 200mm of the periphery of a gas element to a height of 150mm above the element for the full dimension (width and depth) of the cooktop surface area:

- 5mm tiles on GIB® plasterboard
- 5mm toughened glass on GIB® plasterboard
- or any system that can be demonstrated to meet the specific requirements of AS/NZS 5601.1

GIB® plasterboard products must not be exposed to temperatures in excess of 52°C for sustained periods. Check with the appliance manufacturer that this requirement will be met. It would be unusual for surfaces outside 200mm to exceed 52°C for sustained periods.

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 49 of 125
Building Consent BC200635.02
Received 20/12/2021

INTERNAL MOISTURE – CLAUSE E3

The New Zealand Building Code Clauses that relate to wall surfaces are;

E3.3.4 - Wall surfaces adjacent to sanitary fixtures or sanitary appliances must be impervious and easily cleaned.

E3.3.5 - Surfaces of the building elements likely to be splashed or become contaminated in the course of the intended use of the building, must be impervious and easily cleaned.

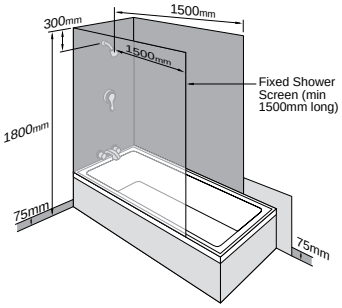
E3.3.6 - Surfaces of building elements likely to be splashed must be constructed in a way that prevents water splash from penetrating behind linings or into concealed spaces.

New Zealand Building Code Acceptable Solution E3/AS2 substantially refers to the Waterproof Membrane Association Incorporated (WMAI) Code of Practice for Internal Wet Area Membrane Systems (IWAM), August 2020.

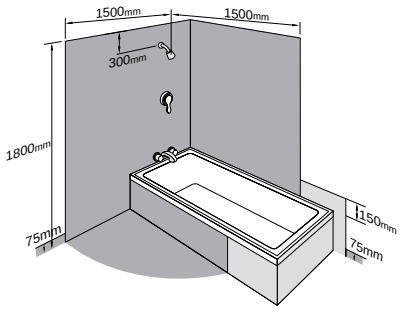
The IWAM Code of Practice refers to wet area membranes and over-surfaces that are easy to clean and suggests an extent as outlined below for a typical bathroom application. For further details refer to the IWAM Code of Practice which also lists suitable rigid sheet materials and tiling membranes.

Shaded areas in the diagrams below represent the minimum extent of wall surfaces requiring impervious sheet materials or waterproof membrane systems prior to tiling.

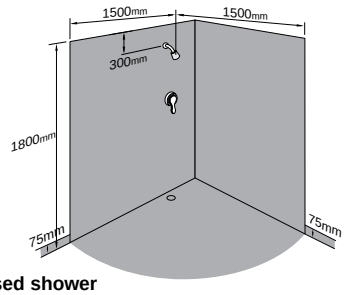
Enclosed shower over bath



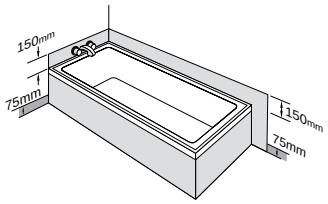
Unenclosed shower over bath



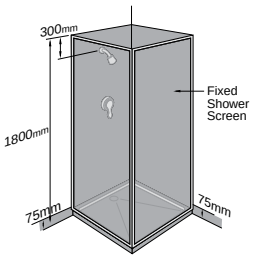
Unenclosed shower



Bath



Enclosed shower



AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 50 of 125
Building Consent BC200635.02
Received 20/12/2021

HAZARDOUS BUILDING MATERIALS – CLAUSE F2

At no stage during its serviceable life does GIB Aqualine® constitute a health hazard. It therefore meets the provisions of NZ Building Code Clause F2 (Hazardous Building Materials). Dust resulting from the sanding of stopping compounds may be a respiratory irritant and the use of a suitable facemask is recommended.

VENTILATION – CLAUSE G4

NZ Building Code Clause G4 (Ventilation) requires buildings to have a means of collecting or otherwise removing steam generated from laundering, utensil washing, bathing or showering. To prolong the life of interior linings and surface finishes and to minimise the risk of moisture related problems such as condensation and mould growth, adequate heating, thermal insulation and mechanical ventilation must be provided in kitchens, bathrooms and laundries.

AIRBORNE AND IMPACT SOUND – CLAUSE G6

GIB® Noise Control Systems can be used to provide ratings for Sound Transmission Class (STC) and Impact Insulation Class (IIC) in accordance with the requirements of NZ Building Code Clause G6 (Airborne and Impact Sound). When GIB Aqualine®, GIB Toughline® Aqua or GIB Weatherline® is substituted into GIB® Noise Control systems in place of the equivalent thickness GIB® Standard plasterboard or GIB Fyreline®, the STC and IIC rating of that system will be maintained. When GIB Aqualine®, GIB Toughline® Aqua or GIB Weatherline® is substituted in place of the equivalent thickness GIB Noiseline®, a small performance loss may occur. For further information refer to the GIB Noise Control® Systems literature or contact the GIB® Helpline 0800 100 442.

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 51 of 125
Building Consent BC200635.02
Received 20/12/2021

TIMBER WALL FRAMING

Framing dimensions must comply with the requirements of NZS 3604:2011.

- The moisture content of timber framing shall be 18% or less at the time of lining
- Studs shall be spaced at 600mm centres maximum for both 10mm and 13mm GIB® plasterboard
- Nogs to be evenly spaced with a maximum spacing of 1350mm. Alternatively, nogs may be staggered 150mm maximum either side of a horizontal joint line
- Nogs are not required behind horizontal joints except in shower situations or specific fire or noise control systems

FASTENERS

- Minimum 32mm x 6g GIB® Grabber® High Thread screws.

FASTENER CENTRES

- 300mm centres to top and bottom plates and to perimeter studs
- Single fasteners to each stud where the horizontal joint crosses the studs
- Place fasteners 12mm from sheet edges and 18mm from sheet ends
- Daubs of GIBFix® adhesive at 300mm centres to intermediate studs
- Do not place adhesive at sheet edges or under fasteners. Sheet edges at door or window openings can be adhesive fixed unless forming part of the perimeter of a bracing element

For bracing, noise control or fire rating applications including fastener lengths consult the relevant GIB® technical publication.

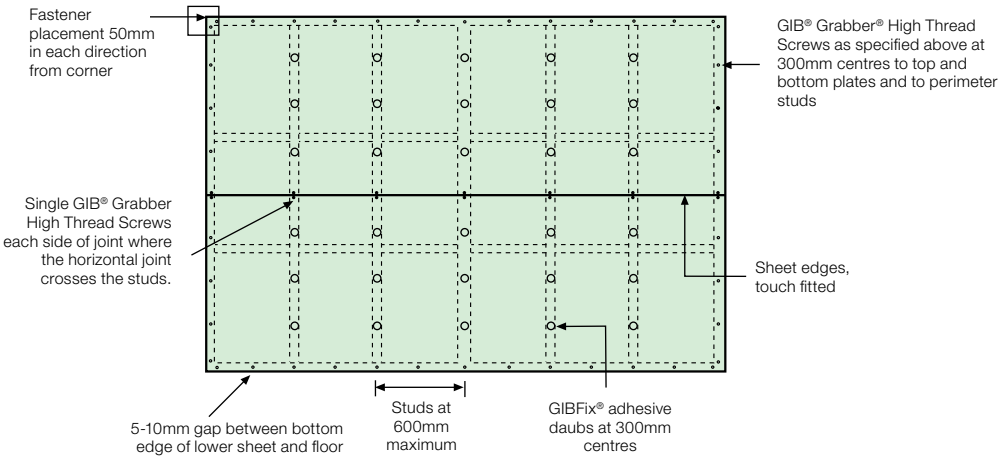
LINING

- Use minimum 10mm GIB® plasterboard
- Install the sheets leaving a 5-10mm gap at the floor line to allow for movement of the framing members and to allow for cleaning dirt and rubbish before sealing
- Sheets to be touch fitted.

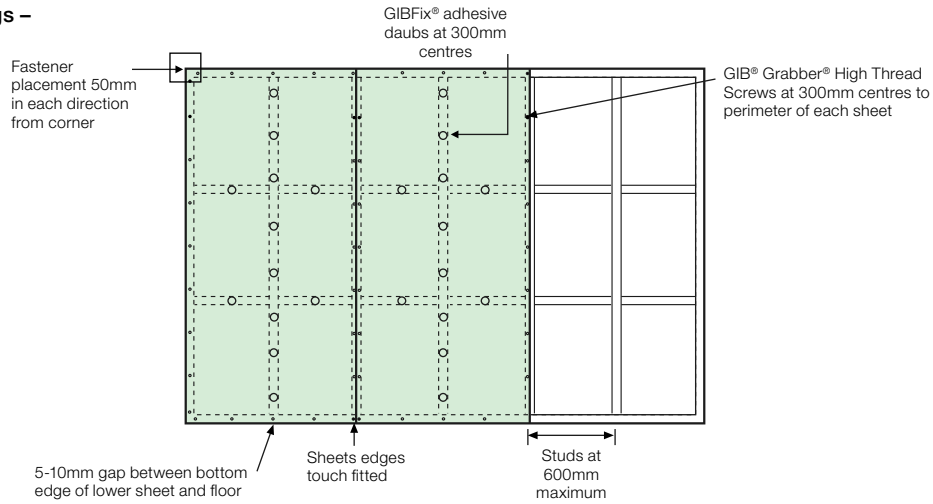
JOINTING

- Jointing shall be carried out in accordance with the instructions in the GIB® Site Guide.

Fastening the Linings – Horizontal Fixing Only



Fastening the Linings – Vertical Fixing Only



AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 52 of 125
Building Consent BC200635.02
Received 20/12/2021

STEEL WALL FRAMING

The minimum sheet thickness for fixing on light gauge 0.55mm base metal thickness (BMT) steel framing is 13mm GIB® plasterboard. For bracing, noise control or fire rating applications consult the relevant GIB® technical publication.

Steel frame for residential construction is in accordance with NZBC B1/AS1 9.1 NASH Standard Part 2 Light Steel Framed Buildings, or by specific design. 10mm GIB plasterboard is commonly used on minimum 0.75mm BMT residential steel framing.

FASTENERS

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

FASTENER CENTRES

- 300mm centres to top and bottom channels and to end studs
- Single screws to each stud where the horizontal joint crosses the studs
- Place fasteners 12mm from sheet edges and 18mm from sheet ends
- Daubs of GIBFix® All-Bond adhesive or screws at 300mm centres to intermediate studs
- Do not place adhesive at sheet edges or under fasteners.
- Sheet edges at door or window openings can be adhesive fixed.

For bracing, noise control or fire rating applications including fastener lengths consult the relevant GIB® technical publication.

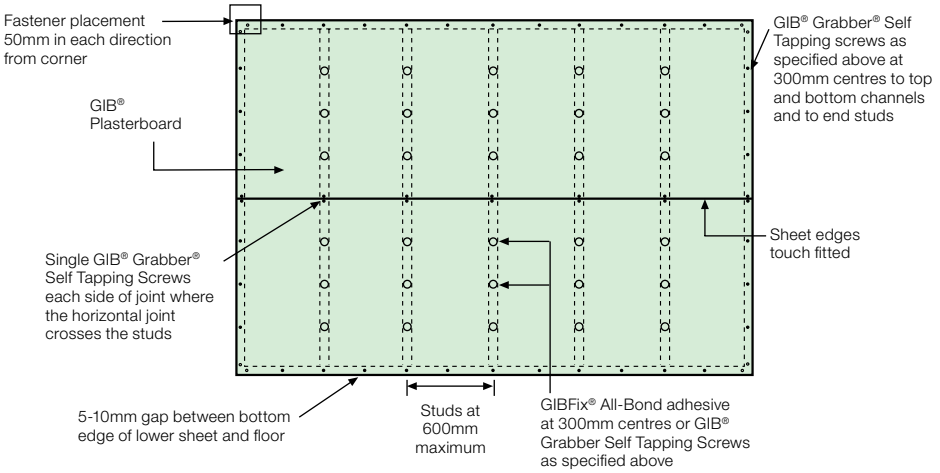
LINING

- Lay the sheets, leaving a 5-10mm gap at the floor line. Note: If friction fitted steel studs have been used, sheets must be fitted hard to the floor. Ensure floor is cured and dry
- Sheets to be touch fitted.

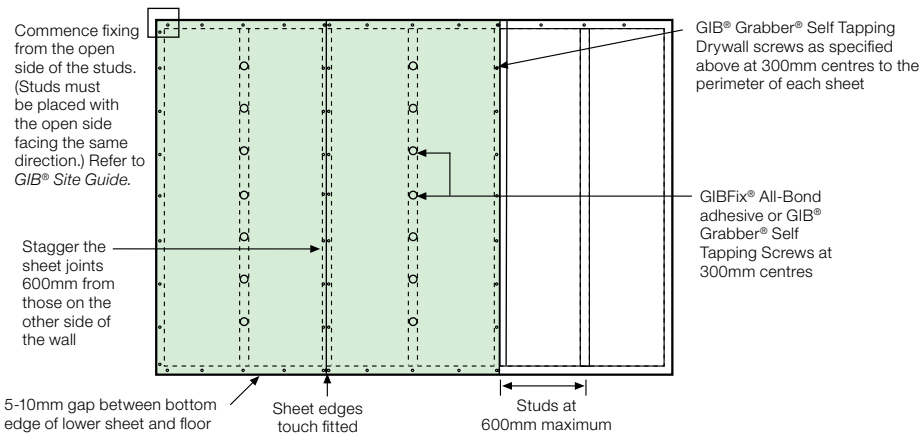
JOINTING

- Jointing shall be carried out in accordance with the instructions in the GIB® Site Guide

Fastening the Linings – Horizontal Fixing Only



Fastening the Linings – Vertical Fixing Only



AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 53 of 125
Building Consent BC200635.02
Received 20/12/2021

TIMBER WALL FRAMING

Framing dimensions and spacing must be appropriate for the tile weight and comply with the requirements of NZS 3604:2011 Timber Framed Buildings, or relevant specific design Standard.

NOGS

For impact protection in shower cubicles or shower over bath situations it is important that all sheet joints are made on solid framing. This may require vertical fixing or the installation of additional nogs. Also provide nogs:

- Adjacent to each pipe penetration and behind sink and tub flashings
- Between all studs above bath flanges and preformed shower bases

CORNER REINFORCING

- Prior to lining in tiled areas (shower cubicles and shower over bath only) the internal corners shall be reinforced with a minimum
- 32 x 32 x 0.55mm NZ18 or 45 x 45 x 0.55mm GIBFix® Angle. Angles need to be temporarily held in place until secured by the lining fixings.

FASTENERS

- Minimum 32mm x 6g GIB® Grabber® High Thread Screws

FASTENER CENTRES

- 150mm centres to perimeter of wall and all intermediate studs
- Adhesive is not to be used in place of mechanical fasteners
- Place fasteners 12mm from sheet edges and 18mm from sheet ends
- Single fasteners to each stud where the horizontal joint crosses the studs
- Where relevant, fastener lengths must comply with the requirements of GIB® Fire Rated Systems or GIB® Noise Control Systems

For bracing, noise control or fire rating applications including fastener lengths consult the relevant GIB® technical publication.

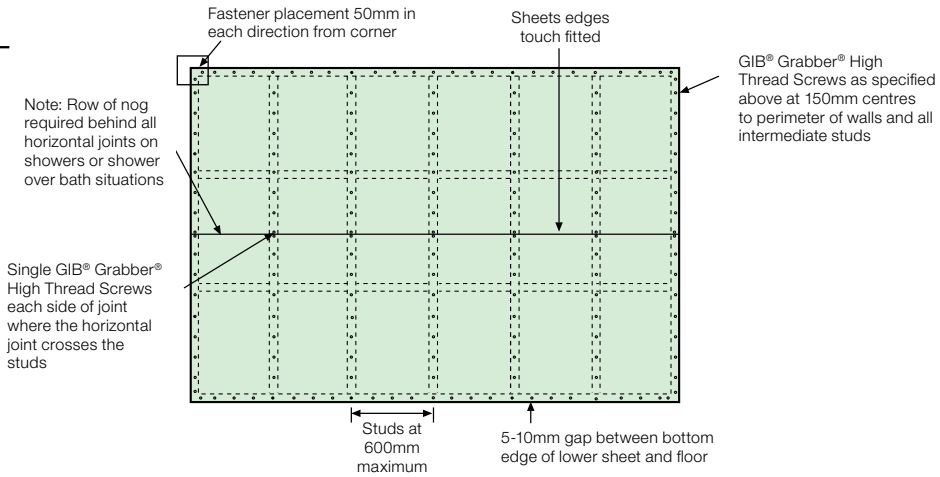
LINING AND TILE WEIGHTS

- Use minimum 10mm GIB® plasterboard
- For maximum permitted tile weights refer to pg 16 of this manual
- GIB® Wet Area linings may be fixed vertically or horizontally
- Sheets are touch fitted
- Provide a 5-10mm gap at the wall/floor junction and between the bottom edge of the lining and any bath rim or preformed shower base to allow for placement of sealant
- Do not tile on the resilient side of GIB Rail® or STWC Acoustic Clip (ST001) and channel noise control system
- GIB® Wet Area linings are suitable for tiling full height of walls, but if a wall is to be partially tiled (e.g. half high), only the area of wall under the tiles needs to be fixed as required for tiled areas. The remainder of the wall may be fixed as for non-tiled areas

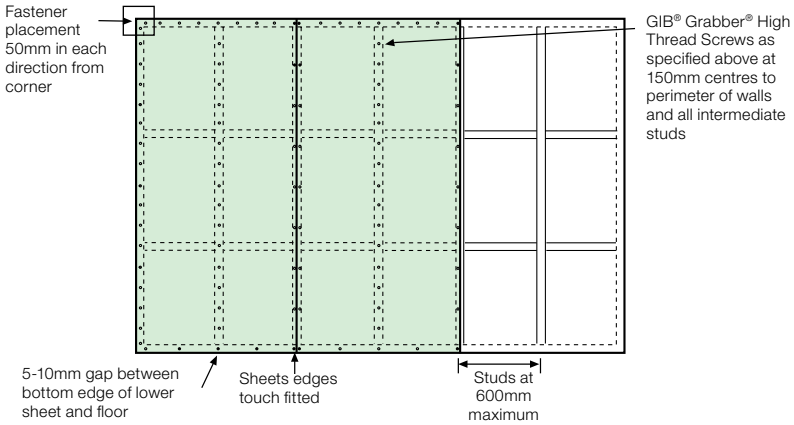
JOINTING

- Jointing shall be carried out in accordance with the instructions of the GIB® Site Guide

Fastening the Linings – Horizontal Fixing Only



Fastening the Linings – Vertical Fixing Only



AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 54 of 125
Building Consent BC200635.02
Received 20/12/2021

STEEL WALL FRAMING

Framing dimensions and spacing must be appropriate for the tile weight and comply with the requirements of NASH Standard Part 2:2019 Light Steel Framed Buildings, or relevant specific design Standard.

- Linings are placed hard to floor, bedded into a sealant bead
- Steel framing for tiling to have a minimum base metal thickness (BMT) of 0.75mm

NOGS

For impact protection in shower cubicles or shower over bath situations it is important that all sheet joints are made on solid framing. This may require vertical fixing or the installation of additional nogs. Also provide nogs:

- Adjacent to each pipe penetration and behind sink and tub flashings
- Between all studs above bath flanges and preformed shower bases

CORNER REINFORCING

- Prior to lining in tiled areas (shower cubicles and shower over bath only) the internal corners shall be reinforced with a minimum
- 32 x 32 x 0.55mm NZ18 or 45 x 45 x 0.55mm GIBFix® Angle. Angles need to be temporarily held in place until secured by the lining fixings

FASTENERS

- Minimum 32mm x 6g GIB® Grabber® Self Tapper screws

FASTENER CENTRES

- 150mm centres to perimeter of wall and all intermediate studs
- Adhesive is not to be used in place of mechanical fasteners
- Single screws to each stud where the horizontal joint crosses the studs
- Place fasteners 12mm from sheet edges and 18mm from sheet ends.

For bracing, noise control or fire rating applications including fastener lengths consult the relevant GIB® technical publication.

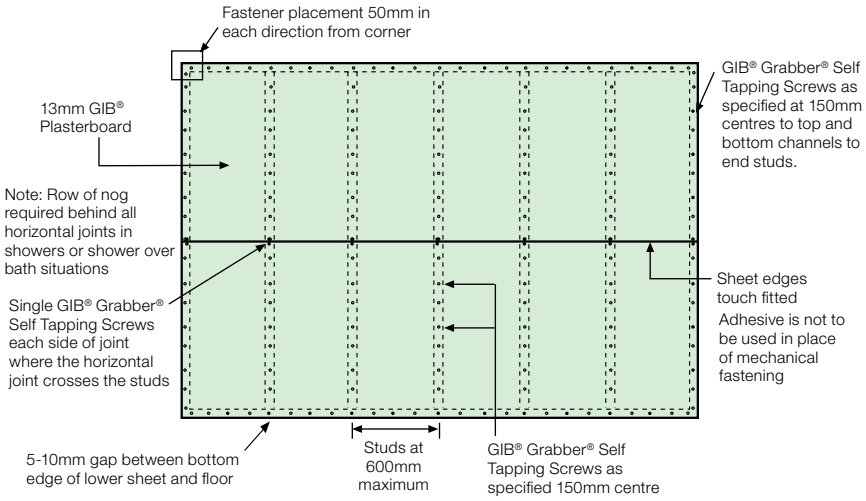
LINING AND TILE WEIGHTS

- Use minimum 13mm GIB® plasterboard
- For maximum permitted tile weights refer to pg 16 of this manual
- GIB® Wet Area linings may be fixed vertically or horizontally
- Sheets are touch fitted
- Provide a 5-10mm gap at the wall/floor junction and between the bottom edge of the lining and any bath rim or preformed shower base to allow for placement of sealant
- Do not tile on the resilient side of GIB Rail® or STWC Acoustic Clip (ST001) and channel noise control system
- GIB® Wet Area linings are suitable for tiling full height of walls, but if a wall is to be partially tiled (e.g. half high), only the area of wall under the tiles needs to be fixed as required for tiled areas. The remainder of the wall may be fixed as for non-tiled areas

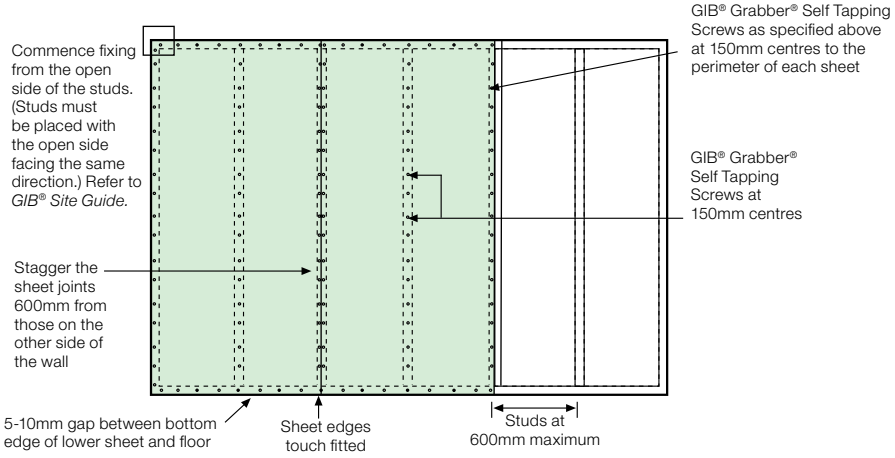
JOINTING

- Jointing shall be carried out in accordance with the instructions of the GIB® Site Guide

Fastening the Linings – Horizontal Fixing Only



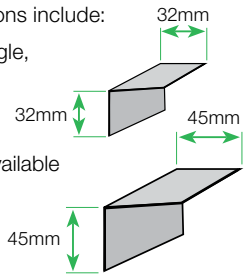
Fastening the Linings – Vertical Fixing Only



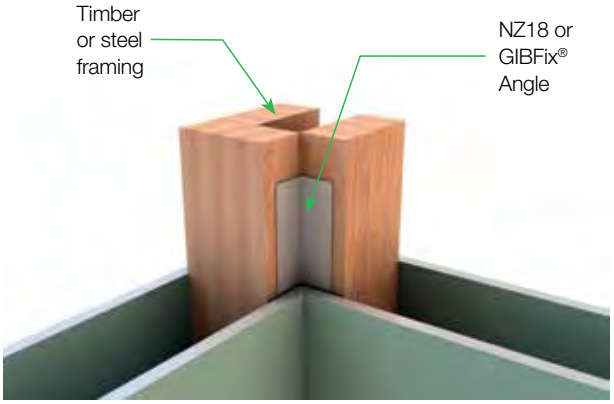
AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 55 of 125
Building Consent BC200635.02
Received 20/12/2021

METAL ANGLES FOR TILED INTERNAL CORNERS

- Prior to lining in tiled areas (shower cubicles and shower over bath only) the internal corners shall be reinforced with a minimum 32 x 32 x 0.55mm galvanised metal angle.
- Suitable GIB® metal angle options include:
  - GIB® Rondo® NZ18 metal angle, available length: 3.0m
  - GIBFix® Angle metal angle, available lengths: 2.4m and 2.7m



- Angles need to be temporarily held in place until secured by the lining fixings
- Minimum height of the metal angle is 1800mm



WATERPROOF MEMBRANE SYSTEMS

A waterproof membrane system must be applied to all lining materials used as a substrate for ceramic tiles in a shower or shower over a bath application, or any other tiled application exposed to frequent water splash.

For further information see p10.

TILES AND TILE WEIGHTS

In areas likely to be directly exposed to water, tiles may be ceramic, porcelain or stone must comply with the over-surface finish requirements of the IWAM Code of Practice and be bedded with a suitable tile adhesive on the waterproof membrane system. See page 10 for the minimum extent of wall surfaces requiring impervious sheet materials or waterproof membrane systems prior to tiling.

Smaller mosaic tiles are often lighter, but the integrity of grout joints might be more prone to impact, whilst heavier tiles are larger and have less and deeper grout and sealant joints. For more information also see AS 3958:2007 Ceramic tiles – Guide to the installation of ceramic tiles.

Table 2: Recommended maximum tile weights

Maximum Tile Weights for GIB Aqualine®, GIB Toughline® Aqua or GIB Weatherline®			
Stud Centre (maximum)	**Fasteners Centre (maximum)**	**Lining Thickness**	**Tile Weight**
600mm maximum	150mm maximum	10mm	26kg/m^2
		13mm	40kg/m^2

ADHESIVE AND GROUT WEIGHTS

The weight of adhesive and grout can vary depending on the type of tile and the installation process used. The maximum tile weights stated in table 2 are conservative and refer to the tile weight excluding grout and adhesive used. An additional 3kg/m^2 has been factored into tile adhesion testing on top of the above stated tile weights to account for adhesive and grout weight used during the installation of the tile.

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 56 of 125
Building Consent BC200635.02
Received 20/12/2021

CEILING FRAMING

Framing dimensions and spacing must comply with the requirements of NZS 3604:2011, NASH for steel or relevant NZ Standard.

For noise control or fire rating applications consult the relevant GIB® technical publication.

FASTENERS

- Steel battens – 25mm x 6g GIB® Grabber® Self Tapping screws
- Timber battens or Joists – 32mm x 6g GIB® Grabber® High Thread screws

ADHESIVES

- Steel battens - GIBFix® All-Bond
- Timber battens - GIBFix® All-Bond or GIBFix® One

FASTENERS CENTRES

- Single screws to the edges and centre of the sheets across each batten
- Single screw at 600mm maximum to the perimeter of the ceiling
- Screws to be 12mm from sheet edges
- Daubs of adhesive at 200mm centres between the screws
- Do not place adhesive at sheet edges or under fasteners, this may lead to screw pops

LINING

- The lining shall be fixed at right angles to the battens or joists
- Commence fixing from the centre of the sheets outwards.
- Sheets to be touch fitted
- Use long length sheets to minimise sheet end butt joints.
- Back-block sheet end butt joints
- See GIB® Site Guide for sheet edge backblocking requirements

BATTEN SPACINGS

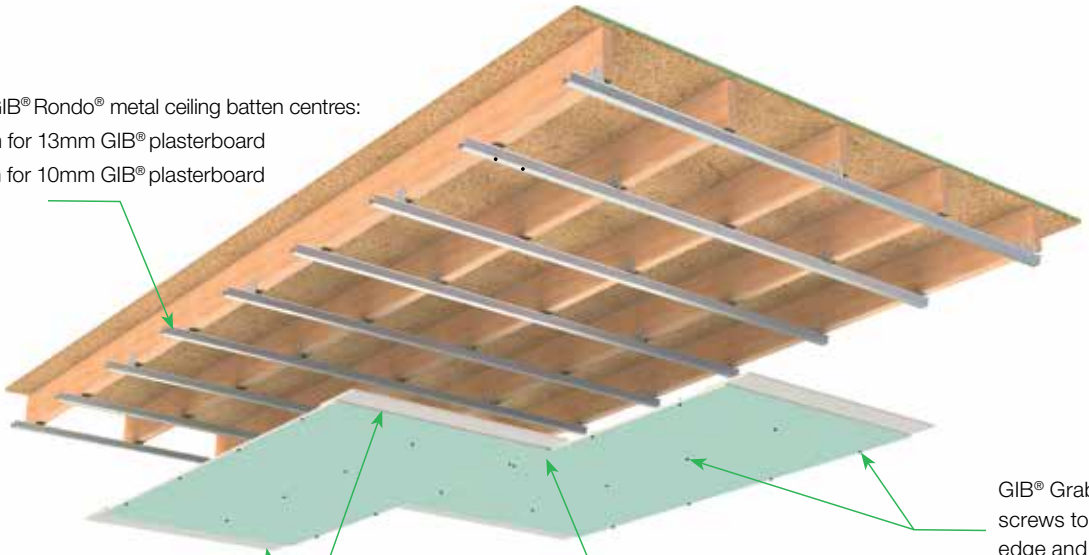
- 13mm GIB® plasterboard – 600mm centres maximum
- 10mm GIB® plasterboard – 450mm centres maximum

JOINTING

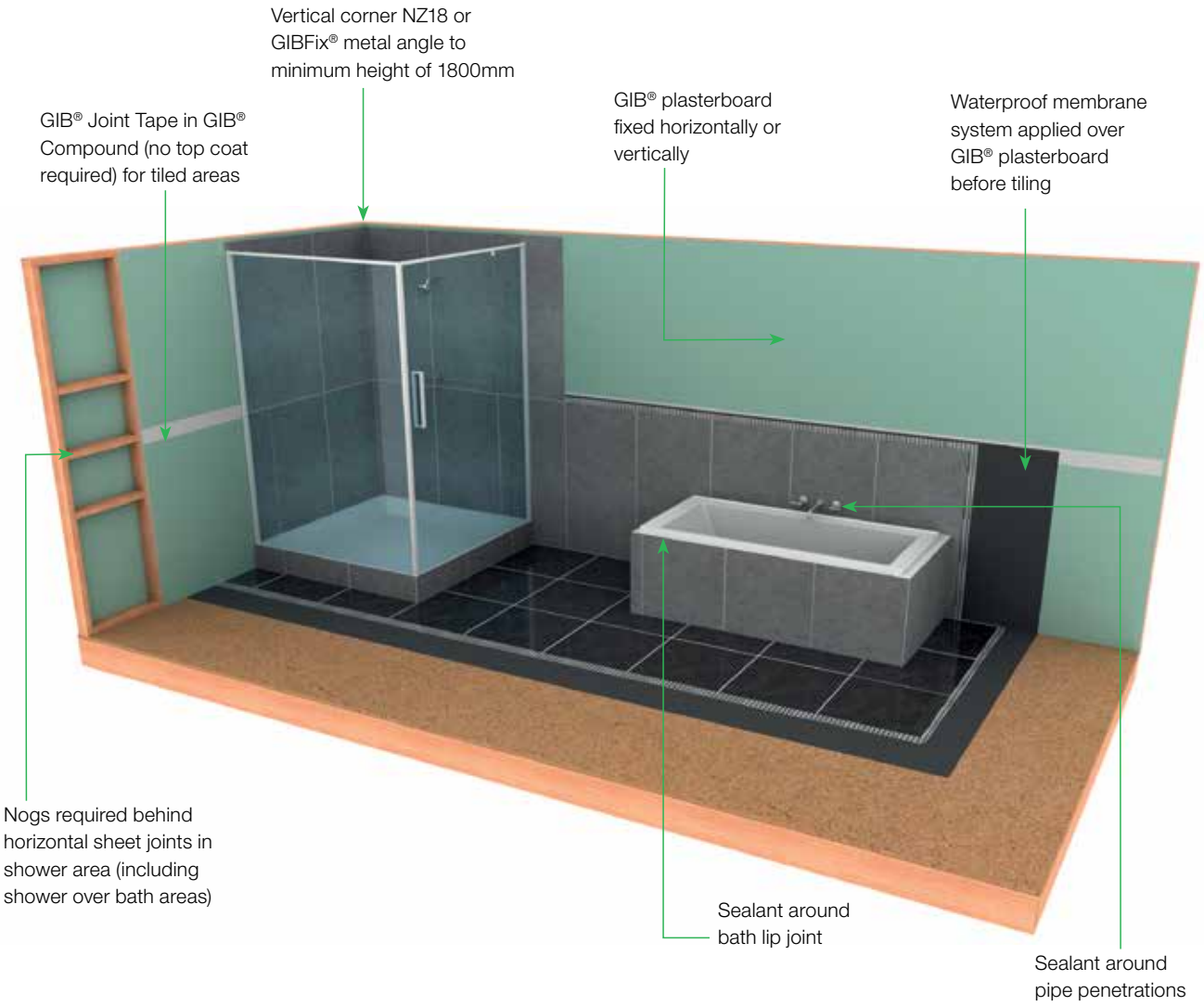
- All sheet joints must be paper tape reinforced and stopped in accordance with instructions in the GIB® Site Guide
- Do not fix tiles to GIB® plasterboard ceilings

Maximum GIB® Rondo® metal ceiling batten centres:

- 600mm for 13mm GIB® plasterboard
- 450mm for 10mm GIB® plasterboard

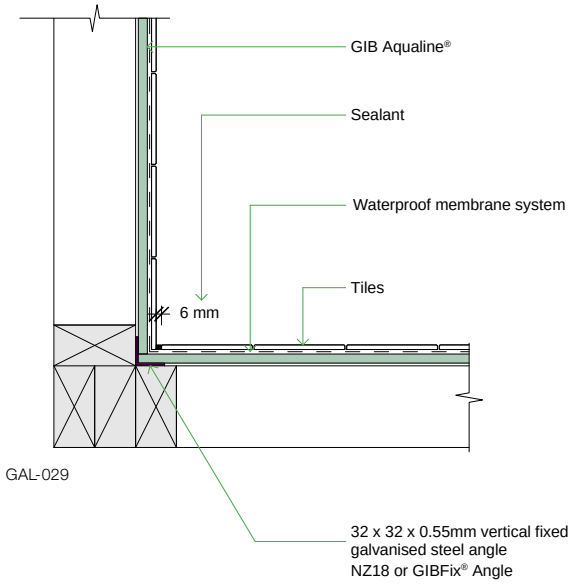


AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 57 of 125
Building Consent BC200635.02
Received 20/12/2021



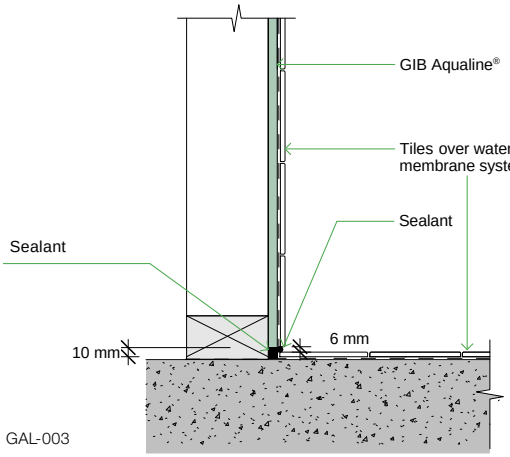
AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 58 of 125
Building Consent BC200635.02
Received 20/12/2021

A: TILED INTERNAL CORNER



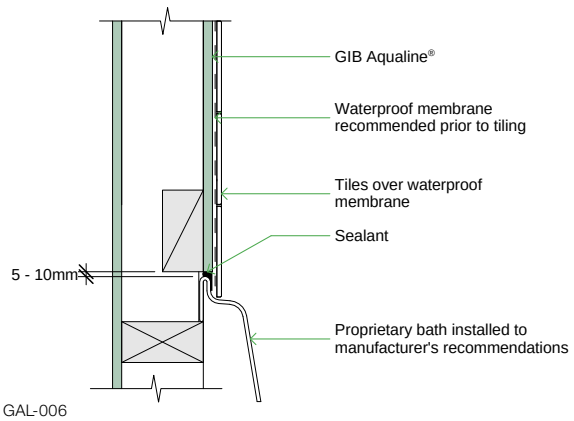
GAL-029

B: CERAMIC FLOOR LINING JUNCTION



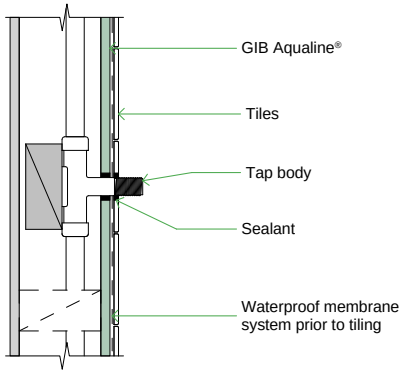
GAL-003

C: BATH LINING JUNCTION



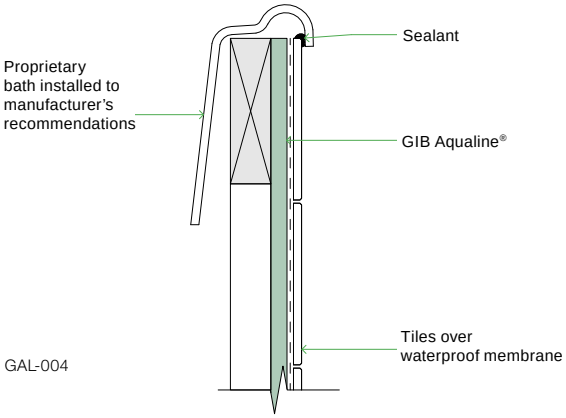
GAL-006

D: SEALING WET AREA PENETRATION



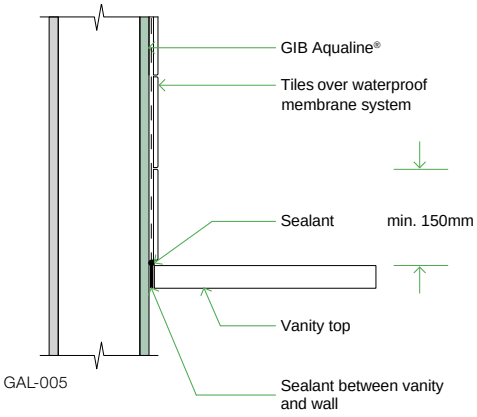
GAL-002

E: BATH CRADLE LINING DETAIL



GAL-004

F: VANITY TOP LINING JUNCTION



GAL-005

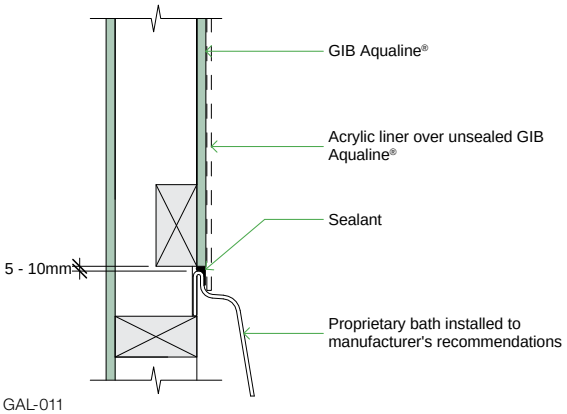


G: SHOWER MIXER PENETRATION IN WET WALL LININGS

Refer to the shower mixer manufacturer for shower mixer installation detailing including the use of proprietary products to prevent water or moisture ingress behind the wet wall lining.

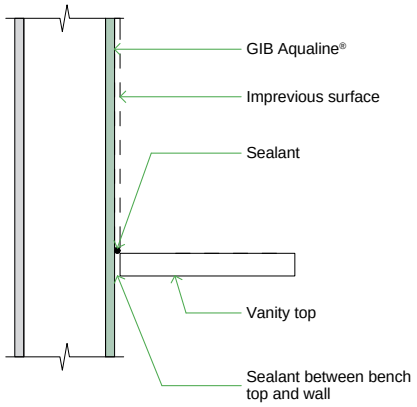
AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 59 of 125
Building Consent BC200635.02
Received 20/12/2021

A: BATH LINING JUNCTION



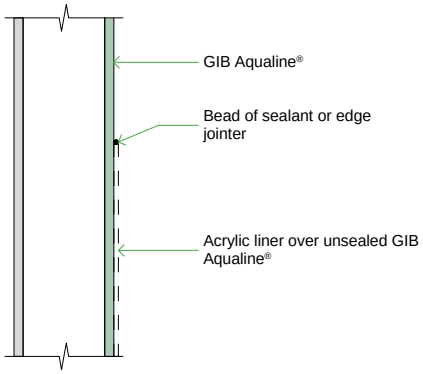
GAL-011

B: VANITY TOP LINING JUNCTION



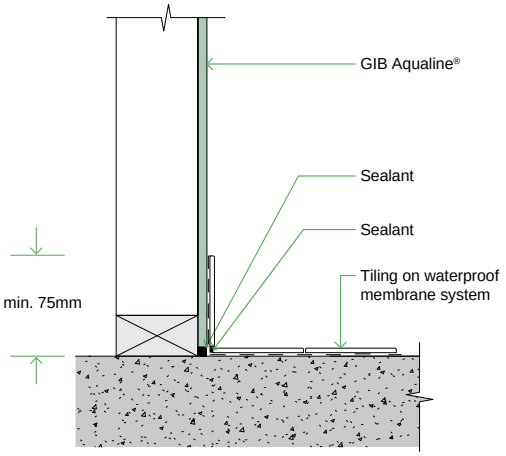
GAL-023A

C: UNSEALED PLASTERBOARD LINING



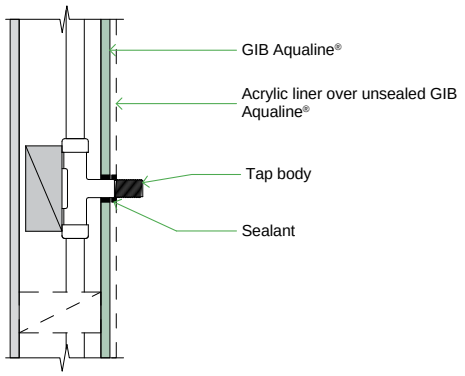
GAL-028

D: CERAMIC FLOOR SKIRTING LINING JUNCTION



GAL-001

E: SEALING SEMI WET AREA PENETRATION



GAL-019

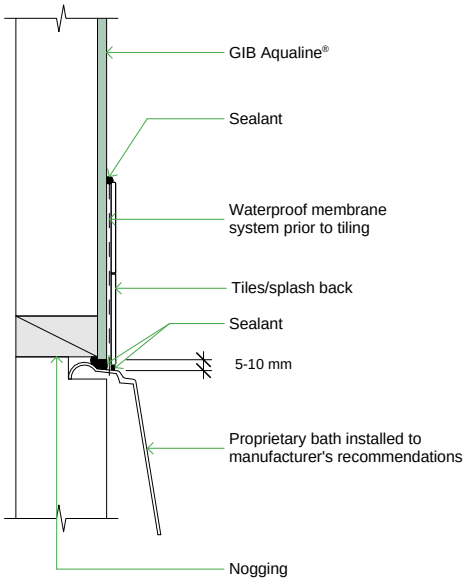
F: SHOWER MIXER PENETRATION IN WET WALL LININGS

Refer to the shower mixer manufacturer for shower mixer installation detailing including the use of proprietary products to prevent water or moisture ingress behind the wet wall lining.



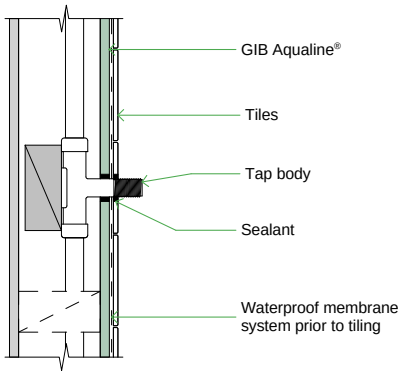
AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 60 of 125
Building Consent BC200635.02
Received 20/12/2021

A: BATH LINING JUNCTION



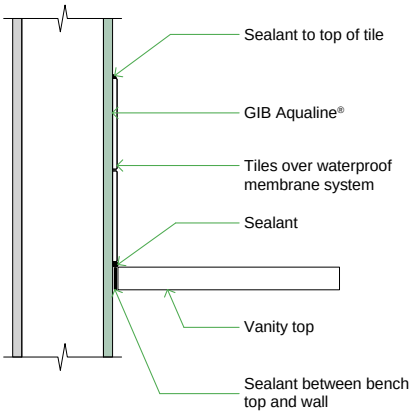
GAL-009

B: SEALING SEMI WET AREA PENETRATION



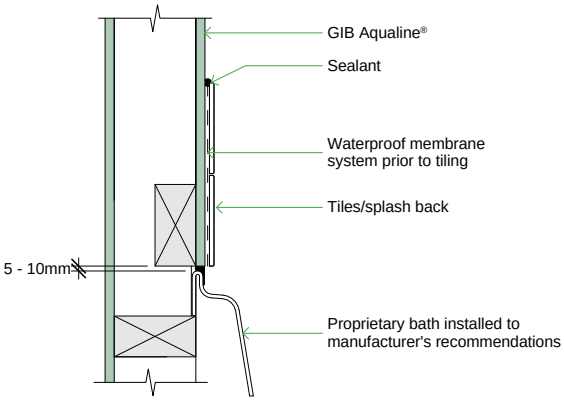
GAL-020

C: VANITY TOP LINING JUNCTION



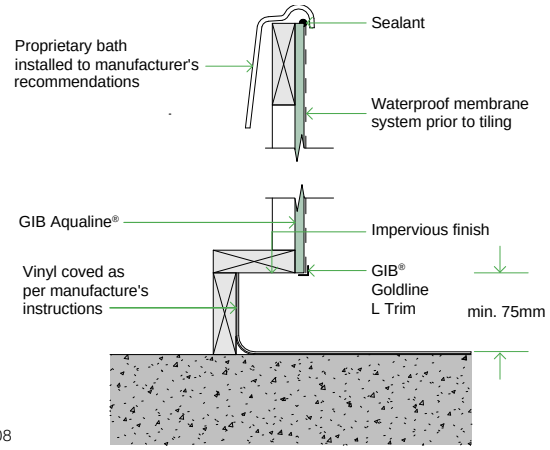
GAL-024

D: BATH LINING JUNCTION

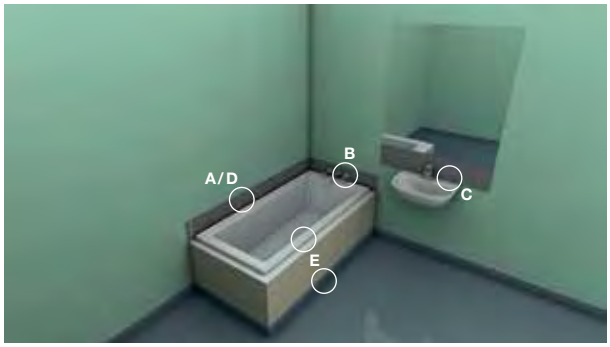


GAL-010

E: CRADLE VINYL LINING JUNCTION

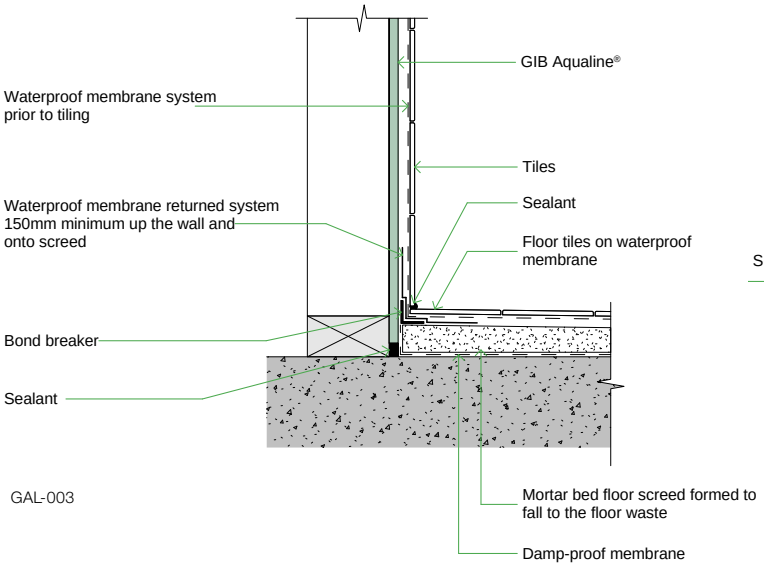


GAL-008



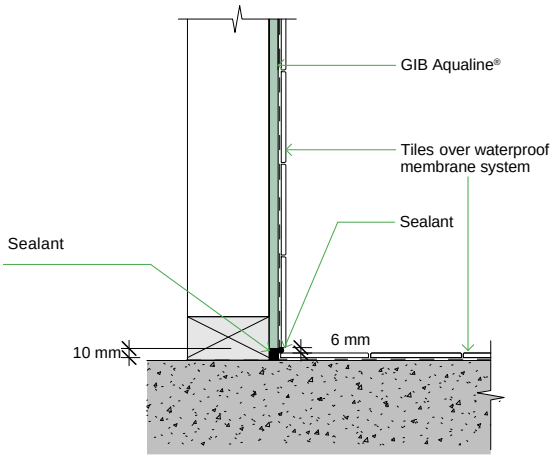
AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 61 of 125
Building Consent BC200635.02
Received 20/12/2021

A: MORTAR UNDER CERAMIC FLOOR LINING JUNCTION



GAL-003

C: CERAMIC FLOOR LINING JUNCTION

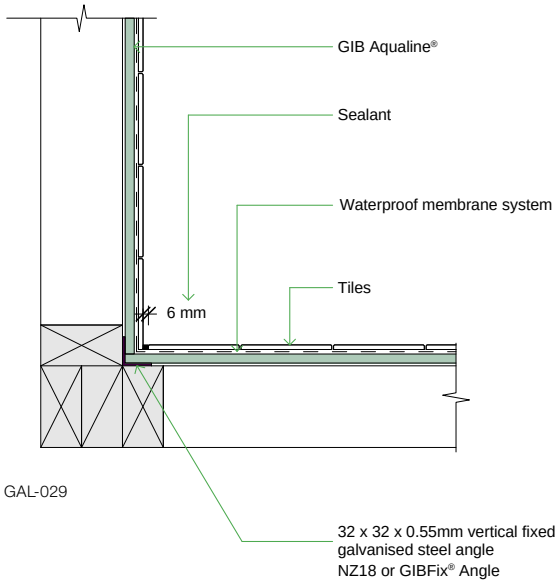


GAL-002A

PREFORMED SHOWER BASE JUNCTIONS

Refer to the shower base manufacturer for proprietary shower tray installation detailing including wet wall lining junction detailing.

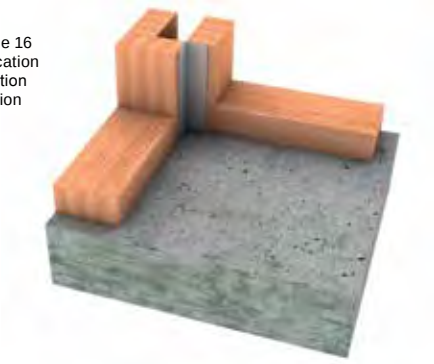
B: TILED INTERNAL CORNER



GAL-029

D: TILED INTERNAL CORNER METAL ANGLE POSITION

Refer to page 16 of this publication for specification and installation guidance.



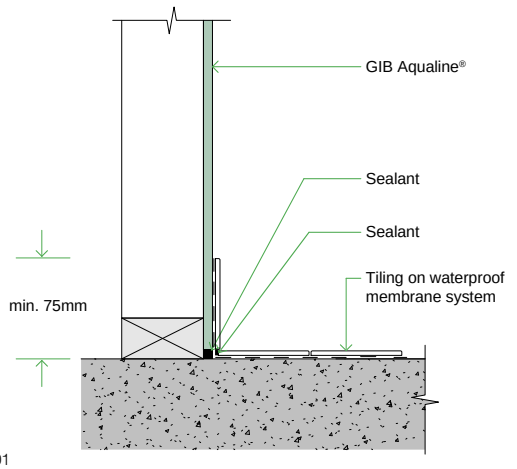
E: SHOWER MIXER PENETRATION IN WET WALL LININGS

Refer to the shower mixer manufacturer for shower mixer installation detailing including the use of proprietary products to prevent water or moisture ingress behind the wet wall lining.



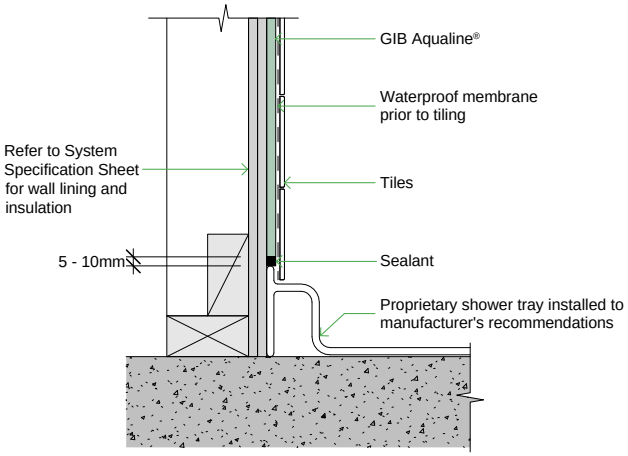
AMENDMENT ISSUED BC200635.02 - 24/12/2021 - Page 62 of 125
Building Consent BC200635.02
Received 20/12/2021

A: CERAMIC FLOOR SKIRTING LINING JUNCTION



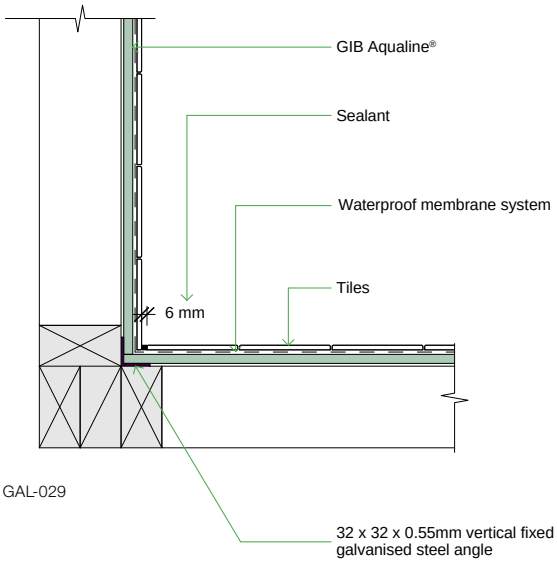
GAL-001

B: MOULDED SHOWER TRAY DOUBLE LINING JUNCTION



GAL-016

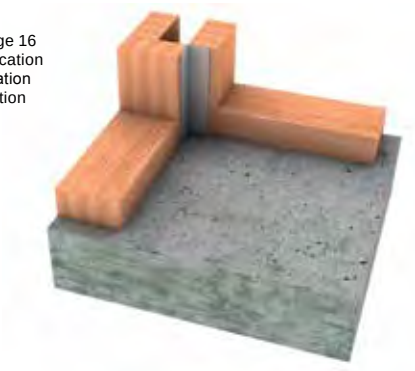
C: TILED INTERNAL CORNER



GAL-029

D: TILED INTERNAL CORNER METAL ANGLE POSITION

Refer to page 16 of this publication for specification and installation guidance.



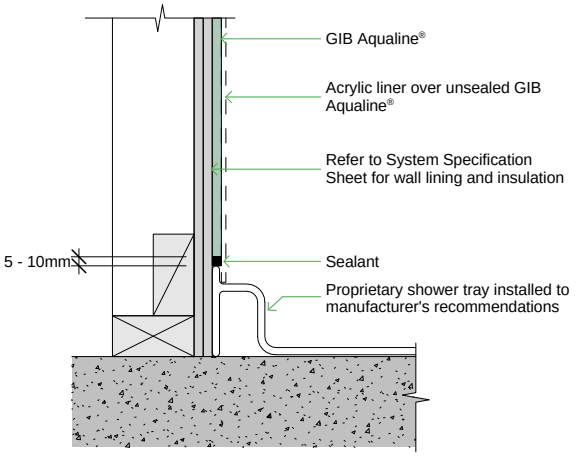
E: SHOWER MIXER PENETRATION IN WET WALL LININGS

Refer to the shower mixer manufacturer for shower mixer installation detailing including the use of proprietary products to prevent water or moisture ingress behind the wet wall lining.



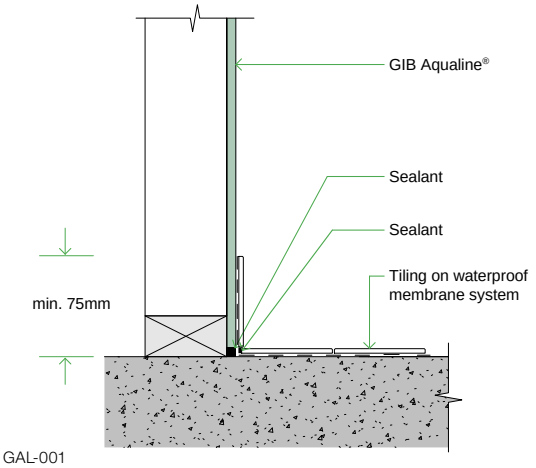
AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 63 of 125
Building Consent BC200635.02
Received 20/12/2021

A: MOULDED SHOWER TRAY DOUBLE LINING JUNCTION



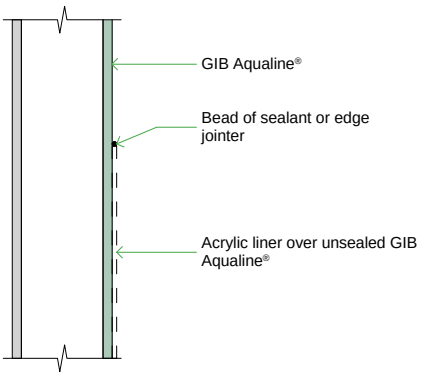
GAL-015

B: CERAMIC FLOOR SKIRTING LINING JUNCTION



GAL-001

C: UNSEALED PLASTERBOARD LINING



GAL-028

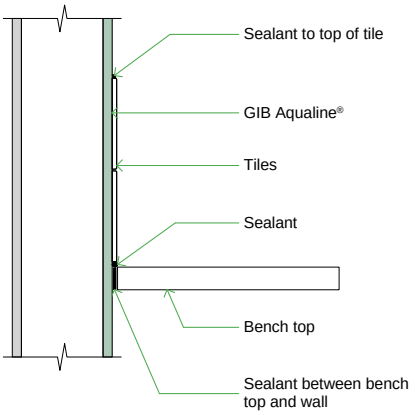
D: SHOWER MIXER PENETRATION IN WET WALL LININGS

Refer to the shower mixer manufacturer for shower mixer installation detailing including the use of proprietary products to prevent water or moisture ingress behind the wet wall lining.



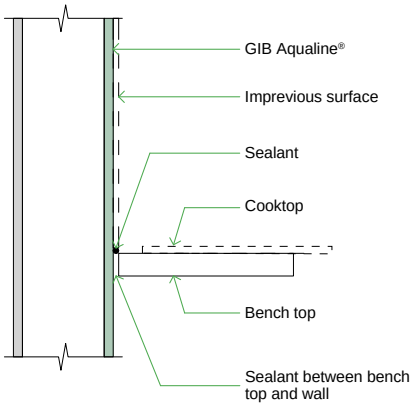
AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 64 of 125
Building Consent BC200635.02
Received 20/12/2021

A: BENCH TOP LINING JUNCTION



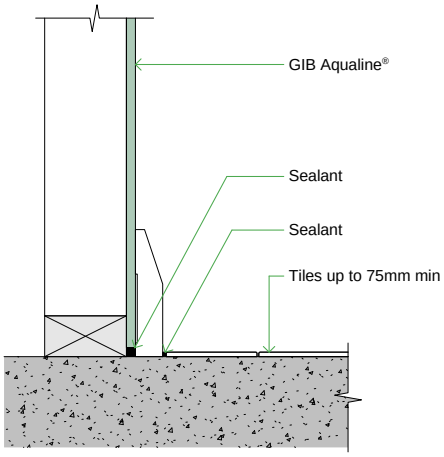
GAL-024

B: COOKTOP LINING JUNCTION



GAL-023B

CERAMIC FLOOR SKIRTING LINING JUNCTION

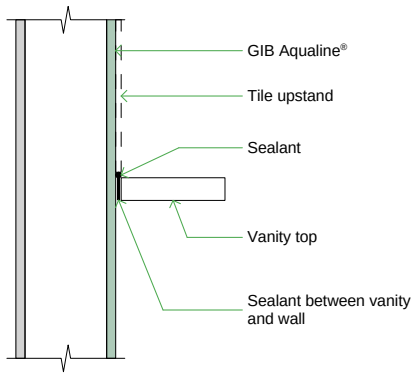


GAL-001A



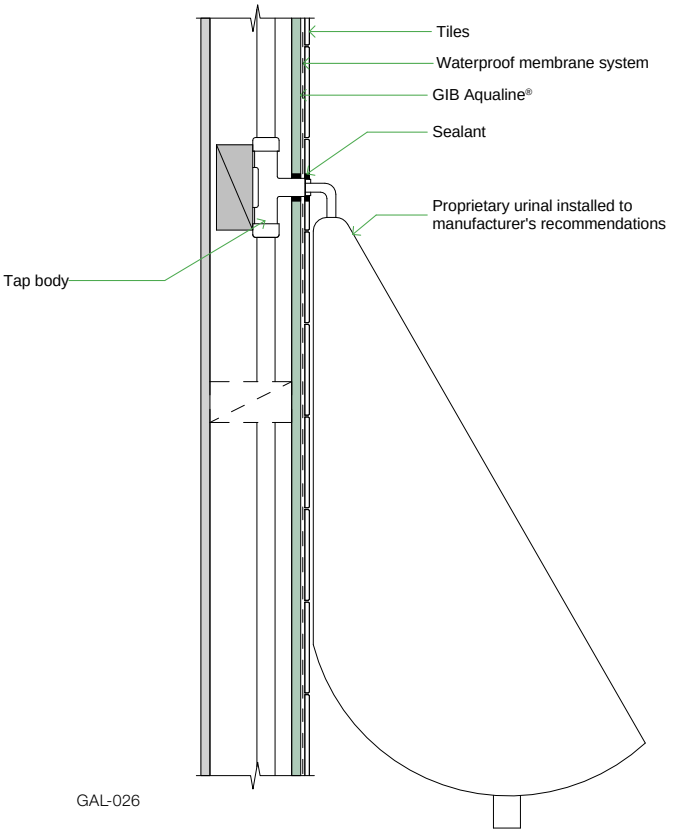
AMENDMENT ISSUED BC200635.02 - 24/12/2021 - Page 65 of 125
Building Consent BC200635.02
Received 20/12/2021

A: VANITY TOP LINING JUNCTION



GAL-022

B: SEALING WET AREA PENETRATION LINING JUNCTION

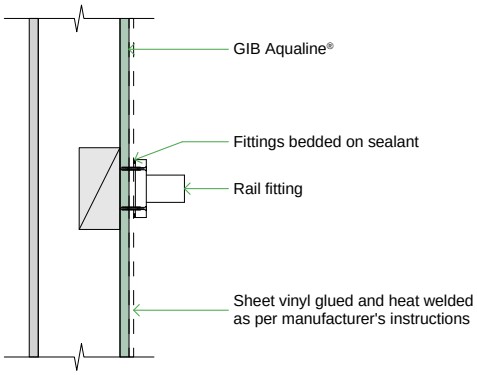


GAL-026



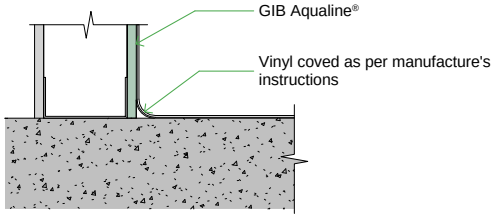
AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 66 of 125
Building Consent BC200635.02
Received 20/12/2021

A: SURFACE MOUNTED WITH NOG



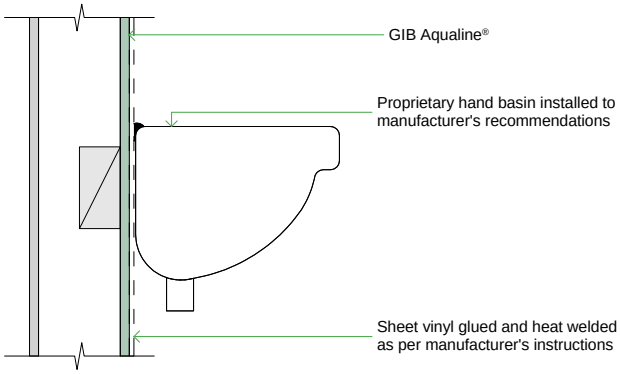
GAL-027

B: VINYL FLOOR LINING JUNCTION



GAL-006A

C: BASIN LINING JUNCTION

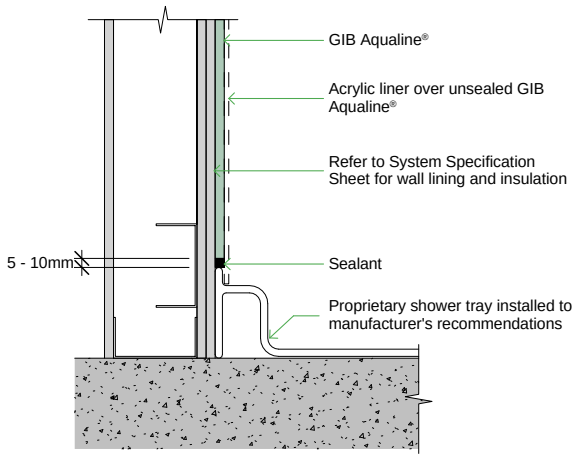


GAL-025



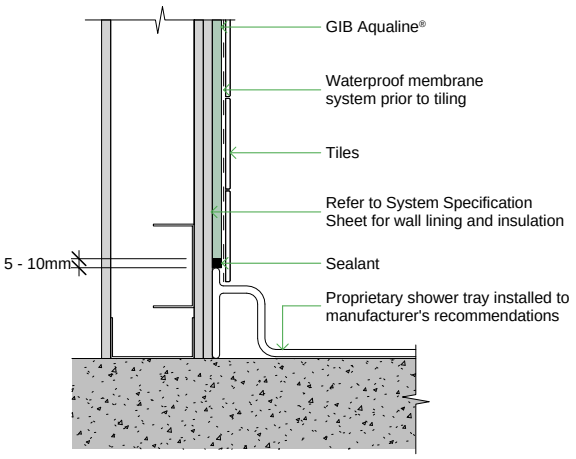
AMENDMENT ISSUED BC200635.02 - 24/12/2021 - Page 67 of 125
Building Consent BC200635.02
Received 20/12/2021

A: MOULDED SHOWER TRAY DOUBLE LINING JUNCTION



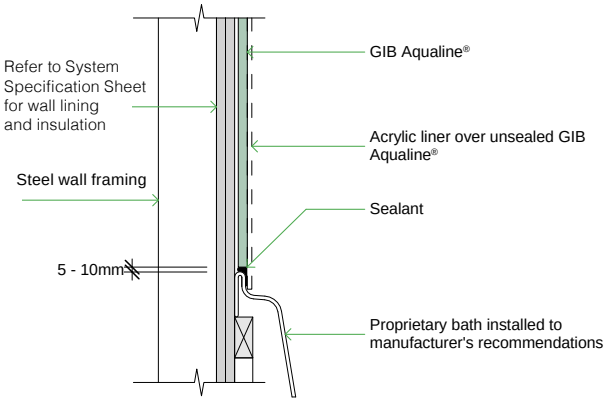
GAL-017

C: MOULDED SHOWER TRAY DOUBLE LINING JUNCTION



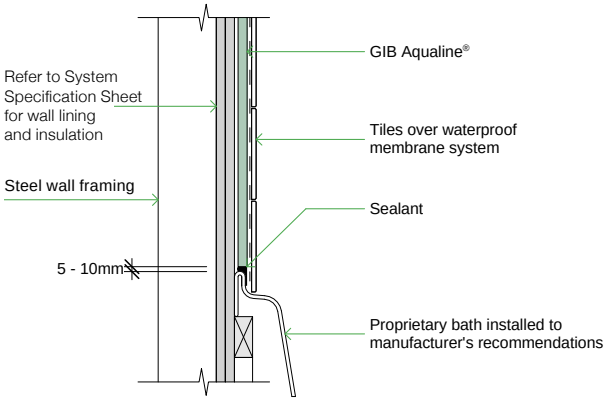
GAL-018

B: BATH DOUBLE LINING JUNCTION



GAL-013

D: BATH DOUBLE LINING JUNCTION



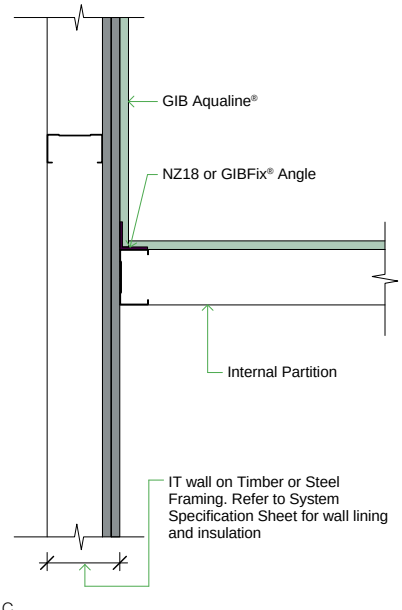
GAL-014

GIB® WET AREA SYSTEMS FIRE RESISTANCE AND NOISE CONTROL PERFORMANCE

Given recesses required for shower trays, bath upstands, etc., and the likelihood of renovations during the service life of the building, it is recommended that GIB® Wet Area linings in water splash areas are installed in addition to and over required fire and noise control systems in commercial or multi-residential applications.

Do not tile on the resilient side of a GIB Rail® or Acoustic Resilient Mount (ST-001) and channel noise control system.

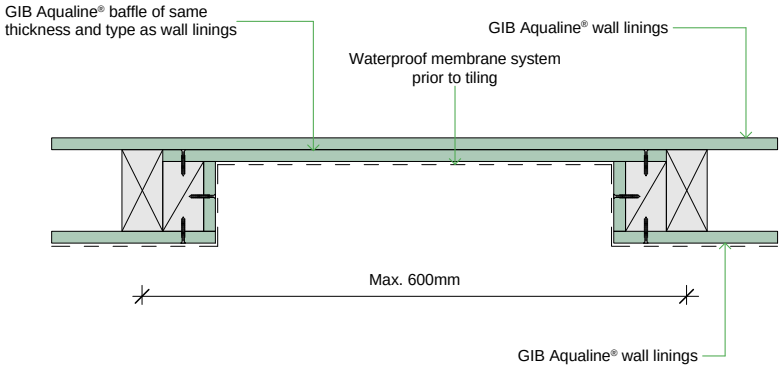
E: INTERTENANCY WALL AND WET AREA WALL JUNCTION



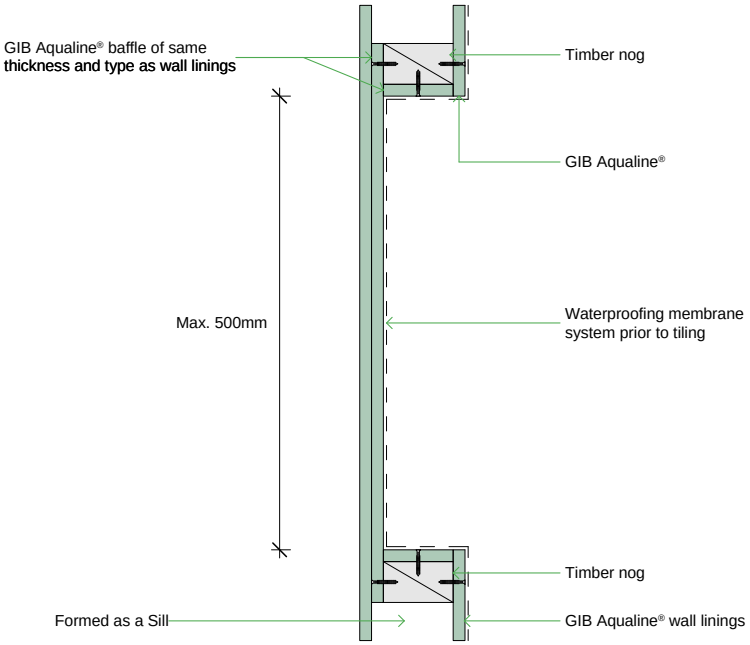
GAL-031C

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 68 of 125
Building Consent BC200635.02
Received 20/12/2021

TIMBER FRAME TILE RECESS



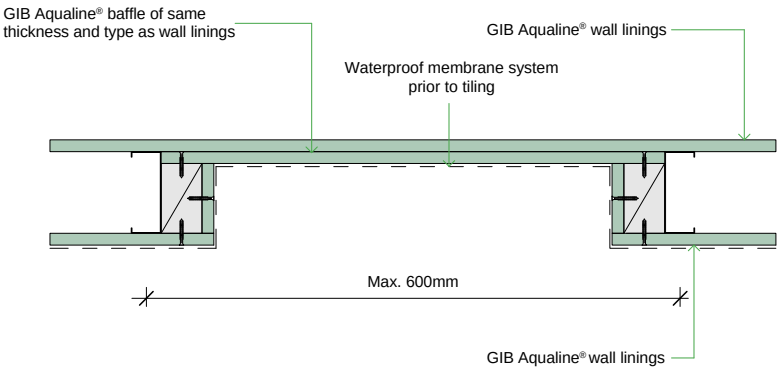
Larger recesses can be accommodated depending on specific framing layout provided 500mm is not exceeded in at least one direction.



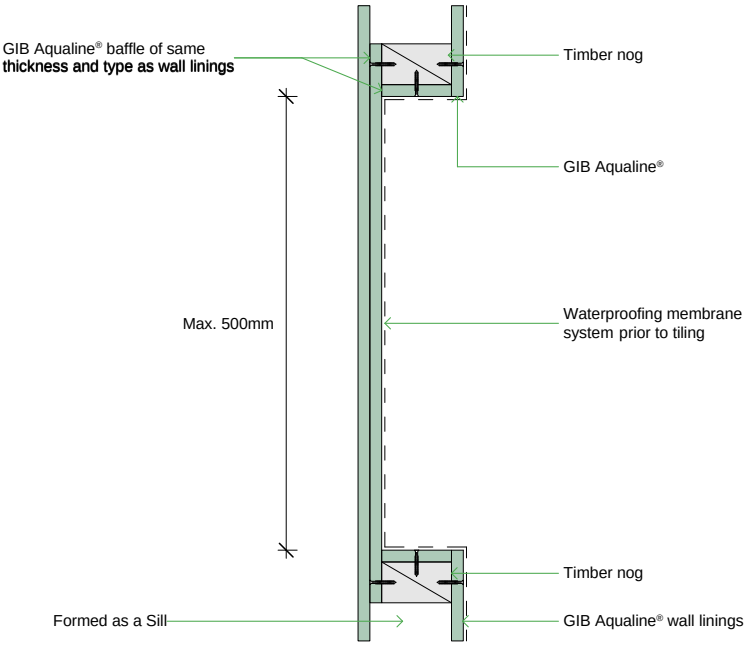
GAL-029B

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 69 of 125
Building Consent BC200635.02
Received 20/12/2021

STEEL FRAME TILE RECESS



Larger recesses can be accommodated depending on specific framing layout provided 500mm is not exceeded in at least one direction.



GAL-030

Building Consent BC200635.02
Received 20/12/2021
AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 70 of 125

GIB® Wet Area Systems, February 2021

LIMITATIONS

Winstone Wallboards Ltd accepts no liability if the GIB® Wet Area Systems and junction details are not installed in strict accordance with instructions contained within this publication.

USE ONLY THE CURRENT SPECIFICATION

This publication may be superseded by a new publication. Winstone Wallboards accepts no liability for reliance upon publications that have been superseded. You should check the GIB® website to ensure you are using the current publication. If you are unsure whether this is the current publication, simply call the GIB® Helpline on 0800 100 442.

SUBSTITUTION

GIB® Wet Area Systems have been specifically designed and tested to achieve the stated performance levels. To maintain the GIB® Product and System Warranty, all system components detailed in this publication must be used when specifying and installing GIB® Wet Area Systems.

TRADEMARKS

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

COPYRIGHT

All of the material contained in this brochure, including all text, tables, charts, graphs, drawings, images and diagrams, are protected by copyright. These materials may not be reproduced, adapted or transmitted in any form by any process, without the permission of Winstone Wallboards Ltd.

Copyright© Winstone Wallboards Ltd, 2021.

Building Consent BC200635.02
Received 20/12/2021

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 71 of 125

GIB®

FOR MORE INFORMATION VISIT

gib.co.nz

OR CALL THE GIB® HELPLINE

0800 100 442

February 2021

Building Consent BC200635.02
Received 20/12/2021
AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 72 of 125

MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
HĪKINA WHAKATUTUKI

Acceptable Solutions and Verification Methods

For New Zealand Building Code Clause
E3 Internal Moisture

WAIMAKARIRI DISTRICT COUNCIL
AMENDED Plan and/or Specifications APPROVED
BC200635.02 23/12/2021 brendam
Change acrylic showers to tiled showers to both

E3 BUILDING CODE

Building Consent BC200635.02
Received 20/12/2021
AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 73 of 125

Status of Verification Methods and Acceptable Solutions

Verification Methods and Acceptable Solutions are prepared by the Ministry of Business, Innovation and Employment in accordance with section 22 of the Building Act 2004. Verification Methods and Acceptable Solutions are for use in establishing compliance with the New Zealand Building Code.

A person who complies with a Verification Method or Acceptable Solution will be treated as having complied with the provisions of the Building Code to which the Verification Method or Acceptable Solution relates. However, using a Verification Method or Acceptable Solution is only one method of complying with the Building Code. There may be alternative ways to comply.

Users should make themselves familiar with the preface to the New Zealand Building Code Handbook, which describes the status of Verification Methods and Acceptable Solutions and explains alternative methods of achieving compliance.

Defined words (italicised in the text) and classified uses are explained in Clauses A1 and A2 of the Building Code and in the Definitions at the start of this document.

Enquiries about the content of this document should be directed to:

MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
HĪKINA WHAKATUTUKI

Ministry of Business, Innovation and Employment
PO Box 1473, Wellington 6140
Telephone 0800 242 243
Email: info@building.govt.nz

Verification Methods and Acceptable Solutions are available from www.building.govt.nz

New Zealand Government

© Ministry of Business, Innovation and Employment 2020

This document is protected by Crown copyright, unless indicated otherwise. The Ministry of Business, Innovation and Employment administers the copyright in this document. You may use and reproduce this document for your personal use or for the purposes of your business provided you reproduce the document accurately and not in an inappropriate or misleading context. You may not distribute this document to others or reproduce it for sale or profit.

The Ministry of Business, Innovation and Employment owns or has licences to use all images and trademarks in this document. You must not use or reproduce images and trademarks featured in this document for any purpose (except as part of an accurate reproduction of this document) unless you first obtain the written permission of the Ministry of Business, Innovation and Employment.

Building Consent BC200635.02
Received 20/12/2021
AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 74 of 125

Document Status

The most recent version of this document (Amendment 7), as detailed in the Document History, is approved by the Chief Executive of the Ministry of Business, Innovation and Employment. It is effective from 5 November 2020 and supersedes all previous versions of this document.

The previous version of this document (Amendment 6) will cease to have effect on 3 November 2021.

People using this document should check for amendments on a regular basis. The Ministry of Business, Innovation and Employment may amend any part of any Verification Method or Acceptable Solution at any time. Up-to-date versions of Verification Methods and Acceptable Solutions are available from www.building.govt.nz

E3: Document History			
	Date	**Alterations**	
First published	July 1992		
Amendment 1	September 1993	p. 7, 3.1.2	
Second edition	28 February 1998	Document revised – second edition issued	
Amendment 2	1 July 2001	p. 2, Document History, Status p. 9, Definitions	p. 14, 2.2.1
Amendment 3	14 October 2004	pp. 3 and 4 Code Clause	
Amendment 4	Effective from 10 October 2011 until 14 August 2014	p. 2, Document History, Status p. 7, References	p. 9, Definitions p. 13, E3/AS1 1.1.2
Amendment 5	14 February 2014 until 30 May 2017	p. 2A, Document History, Status p. 7, References	p. 9, Definitions p. 13, E3/AS1 1.1.4
Amendment 6	Effective from 1 January 2017 until 3 November 2021	p. 13 1.1.4	
Amendment 7	Effective from 5 November 2020	p. 5 Contents p. 7 References p. 10 Definitions	pp. 14–21 E3/AS12.0, 3.0, Figure 6 p. 22 Index
Note: Page numbers relate to the document at the time of Amendment and may not match page numbers in current document.			

Building Consent BC200635.02
Received 20/12/2021

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 75 of 125

2B

Building Consent BC200635.02
Received 20/12/2021
AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 76 of 1024

New Zealand Building Code Clause E3 Internal Moisture

This Clause is extracted from the New Zealand Building Code contained in the First Schedule of the Building Regulations 1992.

FIRST SCHEDULE–*continued*

Clause E3–INTERNAL MOISTURE

Provisions	Limits on application
OBJECTIVE	
E3.1 The objective of this provision is to–	
(a) Safeguard people against illness, injury, or loss of *amenity* that could result from the accumulation of internal moisture; and	
(b) Protect household units and other property from damage caused by free water from another household unit in the same building.	
FUNCTIONAL REQUIREMENT	
E3.2 *Buildings* must be constructed to avoid the likelihood of–	
(a) Fungal growth or the accumulation of *contaminants* on linings and other *building elements*; and	
(b) Free water overflow penetrating to an adjoining *household unit*; and	
(c) Damage to *building elements* being caused by the presence of moisture.	
PERFORMANCE	
E3.3.1 An *adequate* combination of *thermal resistance*, ventilation, and space temperature must be provided to all *habitable spaces*, bathrooms, laundries, and other spaces where moisture may be generated or may accumulate.	Performance E3.3.1 does not apply to *Communal Non-residential, Commercial, Industrial, Outbuildings* or *Ancillary buildings.*
E3.3.2 Freewater from accidental overflow from *sanitary fixtures* or *sanitary appliances* must be disposed of in a way that avoids loss of *amenity* or damage to *household units* or *other property*.	
E3.3.3 Floor surfaces of any space containing *sanitary fixtures* or *sanitary appliances* must be *impervious* and easily cleaned.	

Amend 3 Oct 2004 (E3.1)
Amend 3 Oct 2004 (E3.1 (a))
Amend 3 Oct 2004 (E3.1 (b))
Amend 3 Oct 2004 (E3.2)
Amend 3 Oct 2004 (E3.2 (c))
Amend 3 Oct 2004 (E3.3.1 limits)
Amend 3 Oct 2004 (E3.3.3)

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 77 of 128
Building Consent BC200635.02
Received 20/12/2021

FIRST SCHEDULE–*continued*

Provisions	Limits on application
E3.3.4 Wall surfaces adjacent to *sanitary fixtures* or *sanitary appliances* must be *impervious* and easily cleaned.	
E3.3.5 Surfaces of *building elements* likely to be splashed or become contaminated in the course of the *intended use* of the *building*, must be *impervious* and easily cleaned.	
E3.3.6 Surfaces of *building elements* likely to be splashed must be constructed in a way that prevents water splash from penetrating behind linings or into *concealed spaces*.	

Amend 3
Oct 2004

Building Consent BC200635.02
Received 20/12/2021
AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 7 of 24

Contents

		Page
References		**7**
Definitions		**9**
Verification Method E3/VM1		**11**
Acceptable Solution E3/AS1		**13**
1.0	**Prevention of Fungal Growth**	**13**
1.1	Thermal resistance	13
1.2	Ventilation	14
1.3	Condensation control	14
2.0	**Overflow**	**14**
2.1	Containment	15
2.2	Floor wastes	15
3.0	**Watersplash**	**16**
3.1	Lining materials	16
3.2	Joints	16
3.3	Showers and urinals	17
Index		**22**

Amend 7
Nov 2020

Building Consent BC200635.02
Received 20/12/2021

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 79 of 125

Building Consent BC200635.02
Received 20/12/2021
AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 80 of 128

References

For the purposes of New Zealand Building Code (NZBC) compliance, the Standards and documents referenced in this Verification Method and Acceptable Solution (primary reference documents) must be the editions, along with their specific amendments, listed below. Where these primary reference documents refer to other Standards or documents (secondary reference documents), which in turn may also refer to other Standards or documents, and so on (lower-order reference documents), then the version in effect at the date of publication of this Verification Method and Acceptable Solution must be used.

Amend 5 Feb 2014

Amend 4 Oct 2011

Amend 5 Feb 2014

		Where quoted
Standards New Zealand		
NZS 4214: 2006	Methods of determining the total thermal resistance of parts of buildings	AS1 Definitions, 1.1.2
British Standards Institution		
BS EN 274:- Part 2: 2002	Waste fittings for sanitary appliances Test methods	AS1 2.0.2
Building Research Association of New Zealand		
BRANZ House Insulation Guide: 1995		AS1 1.1.3

Amend 4 Oct 2011

Amend 7 Nov 2020

Building Consent BC200635.02
Received 20/12/2021

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 81 of 125

Building Consent BC200635.02
Received 20/12/2021
AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 82 of 120

Definitions

This is an abbreviated list of definitions for words or terms particularly relevant to this Verification Method and Acceptable Solution. The definitions for any other italicised words may be found in the New Zealand Building Code Handbook.

Amend 4 Oct 2011

Amend 5 Feb 2014

Adequate *Adequate* to achieve the objectives of the *building code*.

Amend 4 Oct 2011

Building has the meaning given to it by sections 8 and 9 of the *Building Act 2004*.

Building element Any structural and non-structural component or assembly incorporated into or associated with a *building*. Included are *fixtures*, services, *drains*, permanent mechanical installations for access, glazing, partitions, ceilings and temporary supports.

Concealed space Any part of the space within a *building* that cannot be seen from an *occupied space*.

COMMENT:
This term includes any ceiling space, roof space, space under a raised floor (such as computer rooms, floors, or stages), plenums, spaces under a tiered floor, "left-over spaces" created when some structural element or the like has been covered in; small service or duct spaces within the volume of a *firecell* and the like, but not a protected shaft.

Construct in relation to a *building*, includes to build, erect, prefabricate, and relocate; and *construction* has a corresponding meaning.

Fixture An article intended to remain permanently attached to and form part of a *building*.

Amend 2 July 2001

Floor waste An outlet located at the low point of a graded floor or in a level floor designed to receive accidental or intentional discharges.

Habitable space A space used for activities normally associated with domestic living, but excludes any bathroom, laundry, water-closet, pantry, walk-in wardrobe, corridor, hallway, lobby, clothes-drying room, or other space of a specialised nature occupied neither frequently nor for extended periods.

Household unit

a) means any *building* or group of *buildings*, or part of a *building* or group of *buildings*, that is:

   i) used, or intended to be used, only or mainly for residential purposes; and

   ii) occupied, or intended to be occupied, exclusively as the home or residence of not more than one household; but

b) does not include a hostel, boarding house or other specialised accommodation.

Amend 4 Oct 2011

Impervious That which does not allow the passage of moisture.

Insulating material A material that has a thermal conductivity of less than 0.07 W/mK.

Intended use in relation to a *building*,—

(a) includes any or all of the following:

   (i) any reasonably foreseeable occasional use that is not incompatible with the *intended use*:

   (ii) normal maintenance:

   (iii) activities undertaken in response to *fire* or any other reasonably foreseeable emergency; but

(b) does not include any other maintenance and repairs or rebuilding.

Person with a disability means a *person* who has an impairment or a combination of impairments that limits the extent to which the *person* can engage in the activities, pursuits, and processes of everyday life, including, without limitation, any of the following:

Amend 2 Jul 2001

   (a) a physical, sensory, neurological, or intellectual impairment:

   (b) a mental illness.

Amend 4 Oct 2011

Plumbing system Pipes, joints and fittings laid above ground and used for the conveyance of *foul water* to the *foul water* drain, and includes vent pipes.

AMENDMENT ISSUED BC200635.02 24/12/2021 Page 83 of 128
Building Consent BC200635.02
Received 20/12/2021

R-value The common abbreviation for describing the values of both *thermal resistance* and *total thermal resistance*.

Amend 7 Nov 2020

Sanitary appliance An appliance which is intended to be used for *sanitation*, but which is not a *sanitary fixture*. Included are machines for washing dishes and clothes

Sanitary fixture Any *fixture* which is intended to be used for *sanitation*.

Amend 7 Nov 2020

COMMENT:
Toilets, urinals, bidets, baths, showers, basins, sinks and tubs are examples of common *sanitary fixtures*.

Sanitation The term used to describe the activities of washing and/or excretion carried out in a manner or condition such that the effect on health is minimised, with regard to dirt and infection.

Thermal resistance The resistance to heat flow of a given component of a *building element*. It is equal to the temperature difference (°C) needed to produce unit heat flux (W/m^2) through unit area (m^2) under steady conditions. The units are °Cm^2/W.

Total thermal resistance The overall air-to-air *thermal resistance* across all components of a *building element* such as a wall, roof or floor. (This includes the surface resistances which may vary with environmental changes, e.g. temperature and humidity, but for most purposes can be regarded as having standard values as given in NZS 4214.)

Building Consent BC200635.02
Received 20/12/2021
AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 84 of 124

Verification Method E3/VM1

No specific methods have been adopted for verifying compliance with the Performance of NZBC E3.

Building Consent BC200635.02
Received 20/12/2021

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 85 of 125

Building Consent BC200635.02
Received 20/12/2021
AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 86 of 122

Acceptable Solution E3/AS1

1.0 Prevention of Fungal Growth

1.0.1 Fungal growth (mildew) is avoided by minimising internal condensation. Condensation is avoided or reduced by maintaining the correct balance between interior temperature and ventilation. Insulation assists in maintaining interior temperatures at a suitable level.

1.0.2 The New Zealand Building Code does not specify minimum heating requirements except for old people's homes and early childhood centres. Occupants will determine their own methods and levels of heating. Typically it is necessary and sufficient, for condensation control in winter, to keep interior temperatures 5°C to 7°C above exterior temperatures in a ventilated space.

1.1 Thermal resistance

1.1.1 *R-values* for walls, roofs and ceilings shall be no less than:

a) For light timber frame wall or other framed wall *constructions* with cavities, 1.5.

b) For single skin normal weight masonry based wall *construction* without a cavity, 0.6.

c) For solid timber wall systems no less than 60 mm thick, 0.6.

d) For roof or ceilings of any *construction*, 1.5.

Amend 4 Oct 2011

1.1.2 *R-values* shall be determined using the methods in NZS 4214. Laboratory test samples shall be truly representative of the wall, roof or ceiling system, including any provision for reducing thermal bridging.

1.1.3 Materials and installation

The BRANZ House Insulation Guide provides examples of acceptable wall, roof and ceiling *constructions* to satisfy the requirements of Paragraph 1.1.1.

COMMENT:

The BRANZ House Insulation Guide gives *constructions* for a range of *R-values*. It is essential to choose the correct *R-values* from these shown in the tables in order to comply with this Acceptable Solution.

1.1.4 For the *construction* to be acceptable:

a) Building paper shall extend from the upper side of the top plate to the underside of the bearers or wall plates supporting the ground floor joists.

b) Deleted

Amend 5 Feb 2014

c) There shall be no perimeter gaps between the *insulating material* and the framing members.

d) Where steel framing is used in Housing and Communical Residential building uses a thermal break with a minimum *R-value* of 0.25 m^2°C/W shall be provided at the outside face of each steel framing member. Expanded polystyrene (EPS) strips, 10 mm thick provide an *R-value* of 0.25 m^2°C/W. Other materials or methods may be used to provide the minimum *R-value* of 0.25 m^2°C/W.

Amend 5 Feb 2014

e) If foil insulation is used it must be placed on the lining side of studs, not the cladding side.

COMMENT:

Amend 5 Feb 2014

1. Frame *construction* with 10 mm plaster board linings and a single layer of foil has an *R-value* of approximately 0.9 and does not satisfy Paragraph 1.1.1.
2. Surface condensation can be a problem where vapour barriers are needed for *buildings* enclosing very warm or wet areas such as spa pools, saunas and swimming pools, or *buildings* in a very cold environment such as ski lodges and mountain huts. These situations are not covered by this Acceptable Solution and require specific design.
3. Thermal breaks should be specifically designed for steel framed *buildings* that are not covered by Building Code Clause E3 Internal Moisture. That is where:
   i) the *building* use is not *Housing* or *Communal Residential*, and
   ii) the moisture load is greater than in Housing, and the building use has high occupant moisture load (eg, schools), and
   iii) there is a temperature differential from inside to outside that is sufficient to cause condensation on steel framing members.

Amend 6 Jan 2017

Amend 5 Feb 2014

1.1.5 Insulation for energy efficiency

Insulation satisfying the energy efficiency requirements of NZBC H1 cannot automatically be assumed to meet the *R-values* for internal moisture requirements of Paragraph 1.1.1.

AMENDMENT ISSUED BC200635.02 24/12/2021 Page 87 of 112
Building Consent BC200635.02
Received 20/12/2021

COMMENT:

Insulation to prevent condensation relates to *thermal resistance* of the *building element* in question (e.g. wall or roof). Insulation for energy efficiency relates to the *building* as a whole, and the requirement can be met in different ways. It is possible, for example, to obtain sufficient energy efficiency in a *building* by heavily insulating the floor and ceiling with no insulation in the walls. This would not satisfy the requirement for this acceptable solution because there would not be sufficient insulation in the walls to minimise condensation.

1.2 Ventilation

1.2.1 Ventilation shall be provided naturally or mechanically to comply with G4/AS1.

1.3 Condensation control

1.3.1 In *buildings* classified as *Housing or Communal residential* which are not air conditioned, metal-framed windows with single glazing shall be *constructed* with a means of condensation disposal. An acceptable method is the provision of a condensation collection channel which, either discharges the water to the outside or is of sufficient capacity to hold the water, without overflowing, until it evaporates.

1.3.2 Condensation channels shall have closed ends and no openings which permit ponded water to contact *building elements* susceptible to moisture. Where provision is made for drainage to the outside, drainage outlets shall have the capacity to expel all condensed water and shall have means of preventing condensed water from being blown back by wind pressure.

1.3.3 Condensation channels and drainage outlets shall be able to be cleaned. The minimum clear dimensions of collection channels shall be 10 mm wide by 5 mm deep.

COMMENT:

1. Condensation can be reduced by good ventilation. Windows incorporating passive ventilators, particularly those with full perimeter ventilation, are effective in reducing condensation.
2. While a 10 mm condensation channel width is normally adequate to prevent overflowing, it is awkward to clean adequately. A more practical width is 20 mm.

2.0 Overflow

2.0.1 If a *sanitary fixture* is located where accidental overflow could damage an adjoining *household unit* or *other property*, then either:

a) Containment and *floor wastes* that meet the requirements of Paragraphs 2.1.1 and 2.2.1 shall be provided, or

b) The exemption for household kitchen sinks and laundry tubs with integrated overflows that meet Paragraph 2.0.2 shall apply.

2.0.2 Household kitchen sinks and laundry tubs that have an integrated overflow with a minimum flow rate of 0.25 l/s do not require additional overflow provision such as containment and a *floor waste* where:

a) The maximum flow rate from the inlet tap(s) is less than the flow rate of the integrated overflow for that sink or tub, or

b) The water supplies to the inlet tap(s) for that sink or tub are fitted with proprietary flow restrictors (such as cartridges) to limit the tap flow rate to less than the flow rate of the integrated overflow for the sink or tub.

Integrated overflows shall be tested and verified in accordance with BS EN 274 to determine their minimum flow rates.

COMMENT

Specifiers applying for building consents will need to demonstrate that integrated overflows have been tested and verified as meeting the minimum flow rate in accordance with BS EN 274. Manufacturers may be able to supply this information.

2.0.2.1 For multiple tubs or sinks installed in a kitchen or laundry and served by a single tap, either:

a) Each individual tub and sink shall have its own integrated overflow complying with Paragraph 2.0.2, or

b) A secondary tub or sink shall have a controlled overflow path into a main tub or sink which has an integrated overflow complying with Paragraph 2.0.2.

Amend 7
Nov 2020

Building Consent BC200635.02
Received 20/12/2021
AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 88 of 120

2.0.3 Containment and *floor wastes* are not required solely to account for the failure of a *sanitary appliance* component or hose, where the flexible discharge hose from the *sanitary appliance* can be directly connected into the *plumbing system* either by mechanical fastening to a fixture trap spigot, or by direct insertion into an open standpipe or a laundry tub waste hose connection port.

COMMENT:

This Acceptable Solution does not regard the failure of a component (e.g. a washer) or hose (e.g. burst hose) of a *sanitary appliance* as an accidental overflow.

Compliance of the spigot, open standpipe, or laundry tub waste hose connection port with NZBC Clause G13 Foul water is outside the scope of this Acceptable Solution.

Amend 7 Nov 2020

2.1 Containment

2.1.1 Containment provided to satisfy Paragraph 2.0.1 a) may be achieved by using *impervious* floor coverings which:

a) Are continuous and coved or joints sealed where they meet the wall (See Figure 1), and

Amend 7 Nov 2020

b) Extend to the doorway and all walls of the room, or to at least 1.5 m from all *sanitary fixtures* and *sanitary appliances* in open-plan rooms.

COMMENT

Additional protection to adjoining *household units* and *other property* may be provided by the use of construction details that provide more complete prevention of the passage of overflow water at doorways and open plan areas. However, doing so will exceed the requirements of this Acceptable Solution.

Amend 7 Nov 2020

2.2 Floor wastes

2.2.1 *Floor wastes* provided to satisfy Paragraph 2.0.1 b) shall comply with NZBC Clause G13. A graded floor is not essential in this situation.

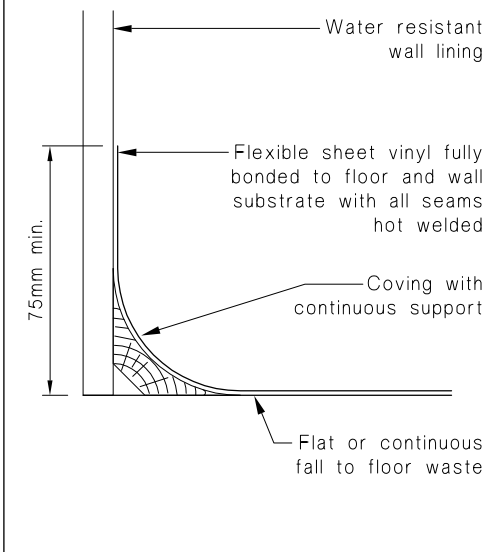
Amend 2 Jul 2001

COMMENT

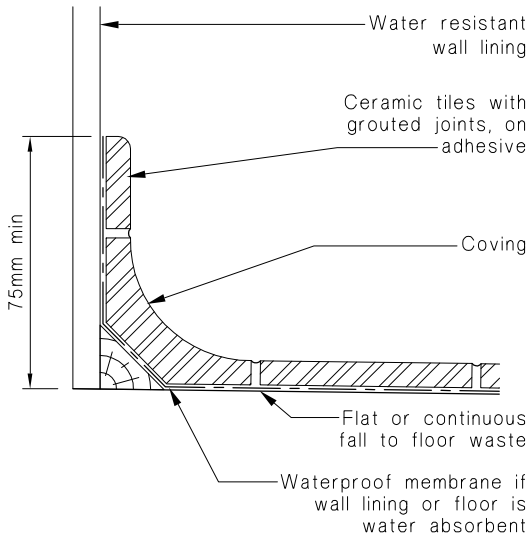
Acceptable Solutions G13/AS1 and G13/AS3 contain provisions for *floor wastes* that comply with NZBC Clause G13 Foul water.

Amend 7 Nov 2020

Figure 1: Floor Coverings at Wall Junctions
Paragraph 2.1.1



(a) Vinyl floor covering



(b) Ceramic tile covering

AMENDMENT ISSUED BC200635.02 24/12/2021 Page 89 of 112
Building Consent BC200635.02
Received 20/12/2021

3.0 Watersplash

3.1 Lining materials

3.1.1 Floors

The following finishes to floors satisfy the performance for *impervious* and easily cleaned surfaces in spaces containing *sanitary fixtures* or *sanitary appliances*. In open plan spaces this surface shall extend at least 1.5 m from all *sanitary fixtures* and *sanitary appliances*:

Amend 7 Nov 2020

COMMENT

The requirement for *impervious* and easily cleaned floor surfaces applies to spaces such as kitchens, bathrooms, laundries and toilet facilities. This requirement applies regardless of whether containment is required by Paragraph 2.0.

a) Integrally waterproof sheet material (e.g. polyvinylchloride) with sealed joints and sealed or coved at edges where watersplash may occur.

Amend 7 Nov 2020

b) Ceramic or stone tiles having 6% maximum water absorption, waterproof grouted joints, and bedded with an adhesive specified by the tile manufacturer as being suitable for the tiles, substrate material and the environment of use. Edges of the tiled area where watersplash may occur must be sealed or coved, and tiles must be laid on a continuous impervious substrate or a membrane specified by the manufacturer as being suitable for the tiles, substrate material and the environment of use.

c) A slab-on-grade concrete floor having a steel trowel or polished finish, sealed at edges where watersplash may occur, when used in a domestic laundry within a garage, or in a *building* that contains only sanitary facilities.

COMMENT:

Other floor finishes may also be capable of satisfying the performance for *impervious* and easily cleaned, if installed in a manner that prevents gaps or cracks within the finish and at any parts of its perimeter that are exposed to watersplash, and/or if the surface is sealed with a suitable durable coating. However such other finishes are outside the scope of this Acceptable Solution.

Amend 7 Nov 2020

Water can penetrate behind or under floor finishes in situations where watersplash occurs regularly (such as around shower enclosures or the fronts of built-in baths), unless these edges are sealed or coved.

Domestic laundries in garages, and *buildings* containing only sanitary facilities, are spaces where the consequences of any small imperfections (such as microcracking) in the imperviousness of a concrete floor are minimal and compliance with NZBC Clause E3 Internal moisture can still be demonstrated.

Amend 7 Nov 2020

3.1.2 Walls

The following linings and finishes to walls satisfy the performance for *impervious* and easily cleaned surfaces in areas adjacent to *sanitary fixtures* or *sanitary appliances*, or otherwise likely to be splashed in the course of the *intended use* of the *building*:

Amend 7 Nov 2020

a) Integrally waterproof sheet material (e.g. polyvinylchloride) with sealed joints.

b) Ceramic or stone tiles having 6% maximum water absorption, waterproof grouted joints, and bedded with an adhesive specified by the tile manufacturer as being suitable for the tiles, substrate material and the environment of use.

c) Sheet linings finished with a semi-gloss or gloss coating or a hard-wearing low-sheen latex paint containing mould inhibitors.

Amend 7 Nov 2020

d) Water resistant sheet linings finished with decorative high pressure laminate or factory applied polyurethane or resin, and installed with *impervious* joints (see Figure 2).

COMMENT:

Other wall linings and finishes may also be capable of satisfying the performance for *impervious* and easily cleaned, if installed in a manner that prevents gaps or cracks within the finish and at any parts of its perimeter that are exposed to water splash, and/or if the surface is sealed with a suitable durable coating. However such other finishes are outside the scope of this Acceptable Solution.

Amend 7 Nov 2020

3.2 Joints

3.2.1 Joints between sanitary fixtures and impervious floor finishes

Where *sanitary fixtures* abut *impervious* floor finishes, the base of the fixture must be sealed to the *impervious* floor finish.

Amend 7 Nov 2020

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 90 of 120
Building Consent BC200635.02
Received 20/12/2021

3.2.2 Joints between fixtures and wall linings

Where baths, basins, tubs or sinks abut *impervious* linings, the joint between *fixture* and lining shall be sealed to prevent water penetration to *concealed spaces* or behind linings. (See Figures 3 (a) and (b).)

3.3 Showers and urinals

3.3.1 Showers

All shower spaces shall have *impervious* floors or floor finishes and *impervious* wall linings or wall finishes.

The *impervious* shower wall linings or wall finishes shall extend up the wall to the higher of 1800 mm above the shower floor, or 50 mm above the shower rose.

The top edge of *impervious* shower wall linings or wall finishes shall be sealed to the wall behind (or to the ceiling if full height) to prevent condensation penetrating behind the shower wall linings or wall finishes.

Penetrations in the shower wall for tapware, mixers, roses etc. shall be waterproofed with a proprietary flange system or with sealant (refer Figure 6), installed in a way that allows easy access when replacing washers, ceramic discs and o-rings.

COMMENT

Some tapware manufacturers have specific product installation requirements that are additional to the use of sealant around the tapware penetration.

3.3.1.1 Shower floor materials

Within shower enclosures, or within a 1500 mm horizontal radius from the shower rose where there is no shower enclosure such as a wall, screen, door or curtain (see Figure 5), one of the following materials or finishes to floors shall be used:

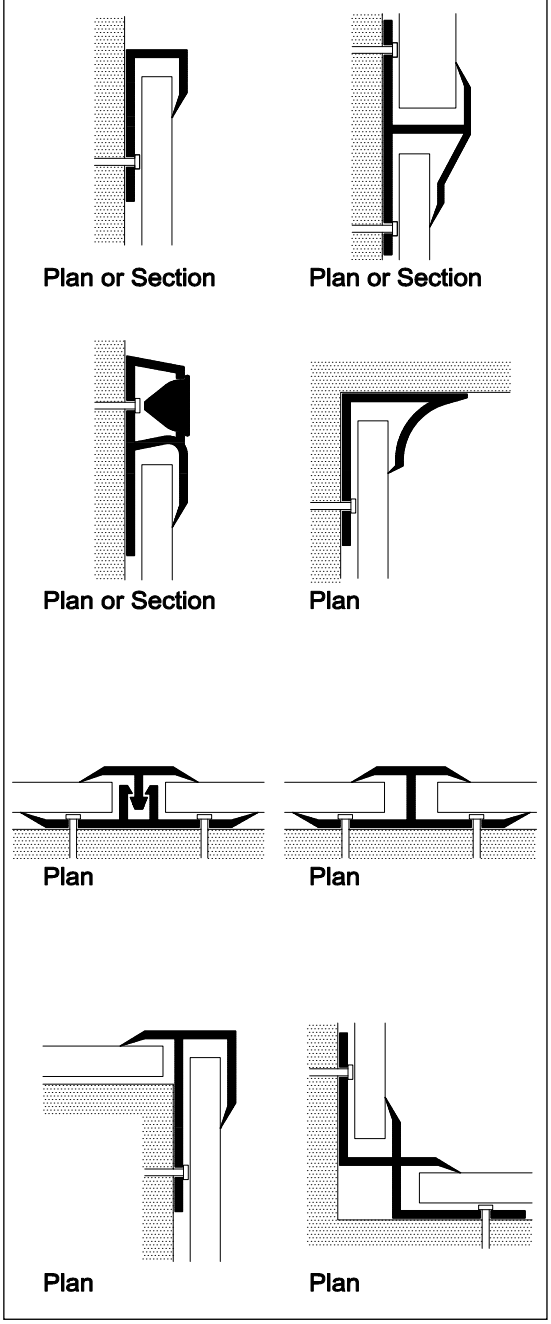
a) Plastic or stainless steel shower trays

b) Integrally waterproof sheet material (e.g. polyvinylchloride) with sealed joints, and coved at edges

c) Ceramic or stone tiles having 6% maximum water absorption, waterproof grouted joints, and bedded with an adhesive specified by the tile manufacturer as being suitable for the tiles, substrate material and the environment of use. The shower must also have tiled walls (see Paragraph 3.3.1.2 c)), and tiles must be laid either:

i) Within a shower tray specified by the manufacturer as being suitable for the tiles; or

Figure 2: Wall Lining Joints
Paragraph 3.2.1

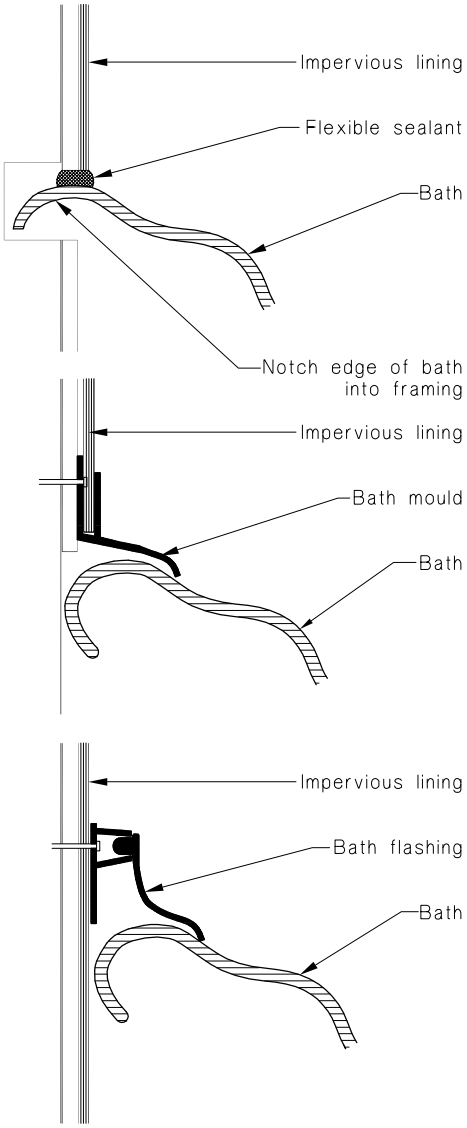


Amend 7 Nov 2020

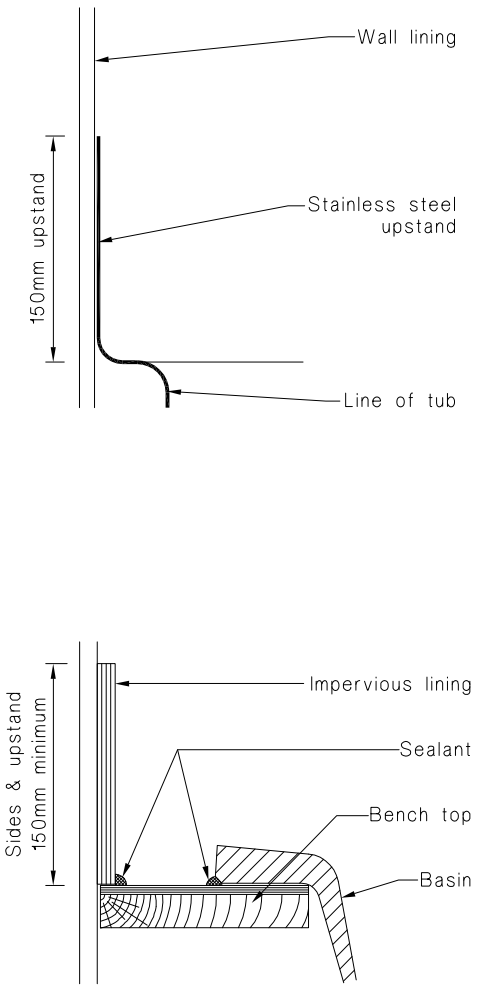
Amend 7 Nov 2020

AMENDMENT ISSUED BC200635.02 24/12/2021 Page 91 of 125
Building Consent BC200635.02
Received 20/12/2021

Figure 3: **Baths, Basins, Tubs and Sinks, Joints against Wall Linings**
Paragraph 3.2.2



(a) Junctions of bath and wall



(b) Tub, sink and basin

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 92 of 128
Building Consent BC200635.02
Received 20/12/2021

ii) On a membrane specified by the manufacturer as being suitable for the tiles, substrate material and the environment of use.

3.3.1.2 Shower wall lining and finish materials

Within shower enclosures or within a 1500 mm horizontal radius from the shower rose where there is no shower enclosure such as a wall, screen, door or curtain (see Figure 5), one of the following linings and finishes to walls shall be used:

a) Plastic shower wall liners, either as a single component without joints, or installed with waterproof joints

b) Integrally waterproof sheet material (e.g. polyvinylchloride) with sealed joints.

c) Ceramic or stone tiles having 6% maximum water absorption, waterproof grouted joints, and bedded with an adhesive specified by the tile manufacturer as being suitable for the tiles, substrate material and the environment of use. Tiles must be laid on a membrane specified by the manufacturer as being suitable for the tiles, substrate material and the environment of use.

d) Water resistant sheet linings finished with decorative high pressure laminate or factory applied polyurethane or resin, and installed with impervious joints (see Figure 2).

3.3.1.3 Showers over baths

For showers over baths, the bath rim must have a minimum height of 15 mm, and the shower wall lining shall lap over and be sealed to the rim of the bath. Either the bath rim must be recessed into the wall framing, or the shower lining must be packed out to suit the rim. A bath mould or flashing shall not be used for showers over baths.

COMMENT

Notches to recess the rim of a bath into the wall framing may require the use of over-sized framing members to ensure that the notches do not detrimentally affect structural performance of the wall.

Amend 7 Nov 2020

3.3.2 Shower enclosures

Shower floors and bases may be constructed with or without upstands, and where installed for use by *people with disabilities* shall have level thresholds.

3.3.2.1 When enclosures, such as walls, screens, doors or curtains are used they shall be continuous from floor level or top of upstand to 1800 mm minimum above floor level and not less than 50 mm above the shower rose.

Amend 7 Nov 2020

3.3.2.2 Where shower trays are used, the junction between tray and wall linings shall be constructed in accordance with Figure 4 (a) or (b).

Amend 7 Nov 2020

3.3.2.3 Where the shower floor has no upstand or where a wall, screen, door or curtain is omitted, the floor shall have a fall of no less than 1:50 towards the *floor waste*. The fall shall apply to the floor area within a radius of 1500 mm taken from a point vertically below the shower rose, or from any wall within that radius. (See Figure 5.)

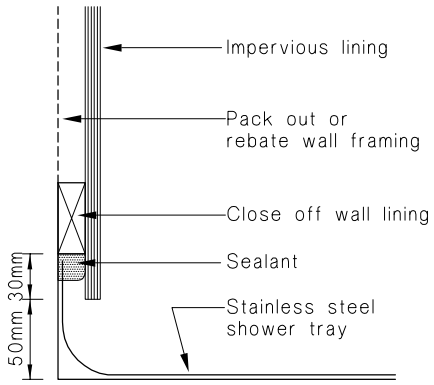
Amend 7 Nov 2020

3.3.3 Urinals

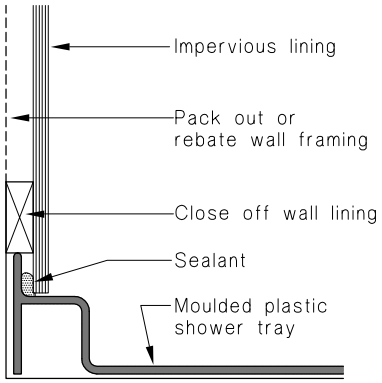
Impervious wall shall extend horizontally at least 300 mm beyond each side of the urinal and vertically from floor level to a height of 1500 mm.

AMENDMENT ISSUED BC200635.02 24/12/2021 Page 93 of 125
Building Consent BC200635.02
Received 20/12/2021

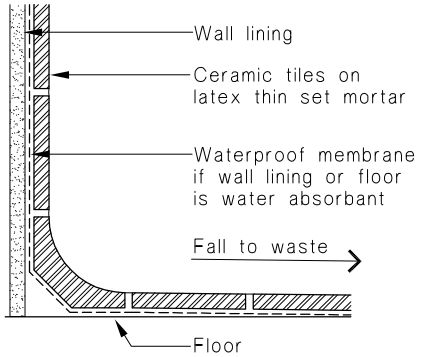
Figure 4: **Shower Trays**
Paragraphs 3.3.1 and 3.3.3



(a) Stainless steel shower tray

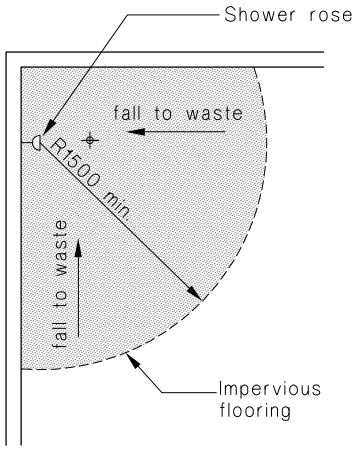


(b) Moulded plastic shower tray

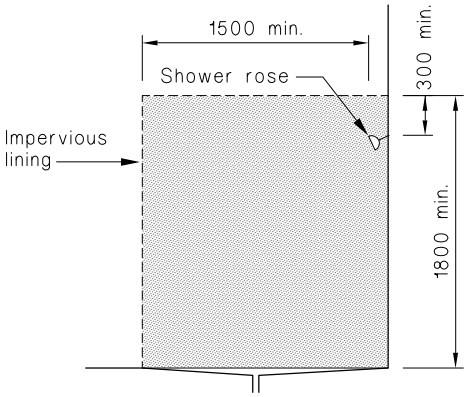


(c) Tiled shower tray

Figure 5: **Wall and Floor Coverings to Unenclosed Showers**
Paragraphs 3.3.1 and 3.3.5



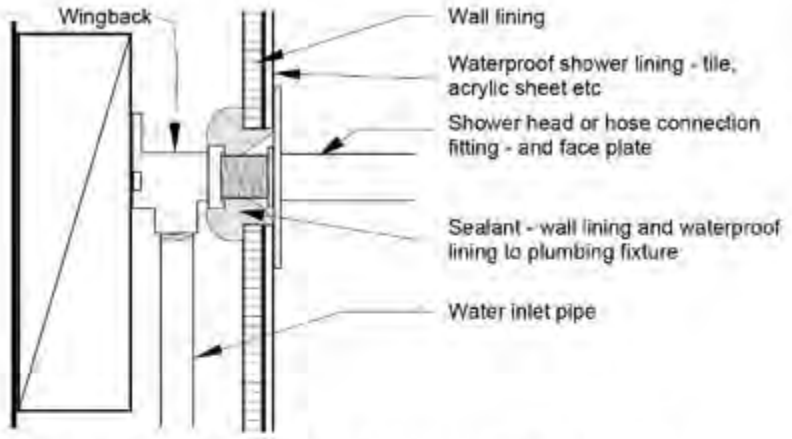
(a) Plan



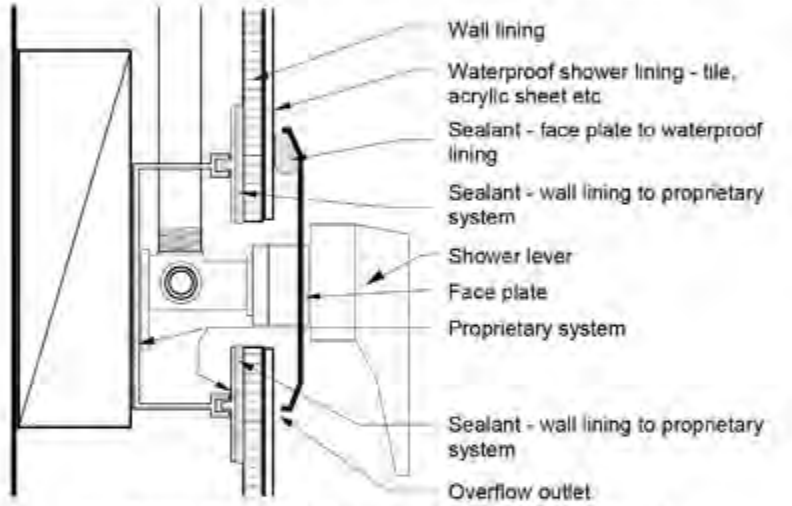
(b) Section

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 94 of 128
Building Consent BC200635.02
Received 20/12/2021

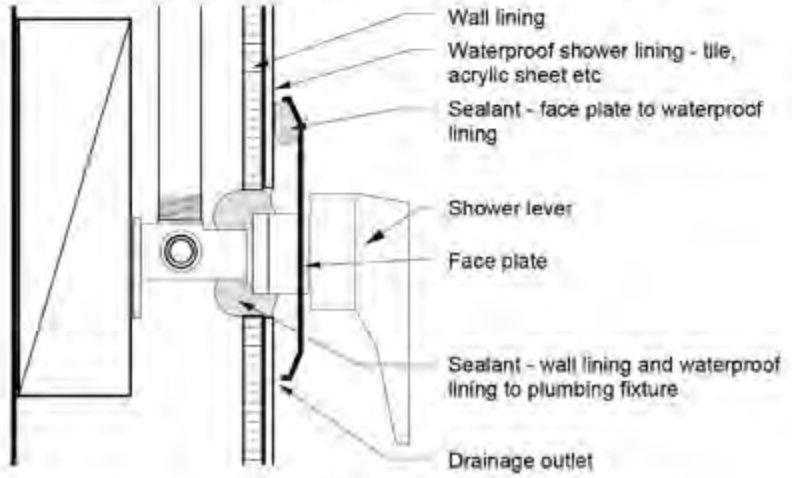
Figure 6: **Examples for waterproofing through shower walls**
Paragraph 3.3.1



(a) Shower head or flexible hose connection using sealant



(b) Shower mixer using proprietary system (example only)



(c) Shower mixer using sealant

Amend 7
Nov 2020

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 85 of 125
Building Consent BC200635.02
Received 20/12/2021

Index

All references to Verification Methods and Acceptable Solutions are preceded by **VM** or **AS** respectively.

Condensation channels **AS1** 1.3

Energy efficiency **AS1** 1.1.5

Internal moisture
- condensation **AS1** 1.0.1, 1.1.5, 1.3
- fungal growth **AS1** 1.0.1

Overflow **AS1** 2.0
- containment . . . . . **AS1** 2.0.1, 2.0.2, 2.0.3, 2.1, Figure 1
- floor wastes **AS1** 2.0.1, 2.0.2, 2.0.3, 2.2

Amend 7 Nov 2020

People with disabilities **AS1** 3.3.2

Steel framing . . . . . **AS1** 1.1.4 d)

Thermal break . . . . . **AS1** 1.1.4 d)

Thermal resistance **AS1** 1.1
- materials and installation **AS1** 1.1.3

Ventilation **AS1** 1.0.1, 1.2

Watersplash **AS1** 3.0
- basins . . . . . **AS1** 3.2.2, Figure 3
- baths . . . . . **AS1** 3.2.2, Figure 3
- joints in linings . . . . . **AS1** 3.2, Figure 2
- lining materials . . . . . **AS1** 3.1, Figure 1
- sinks . . . . . **AS1** 3.2.2, Figure 3
- showers . . . . . **AS1** 3.3.1, 3.3.2, Figures 4, 5 and 6
- tubs . . . . . **AS1** 3.2.2, Figure 3
- urinals **AS1** 3.3.3

Amend 7 Nov 2020

Amend 7 Nov 2020

Windows **AS1** 1.3.1

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 96 of 125

Building Consent BC200635.02
Received 20/12/2021

METRO
Frameless Glass Systems

5 Lady Fisher Place,
Highbrook, Auckland
PO Box 58 144 Botany Auckland 2163

P 09 927 3000
F 09 274 1100
W www.metroglass.co.nz

SECTION 1: SHOWER COMPONENTS — INDEX

Product	Page
Elite and Designer Hinges	1.1 - 1.2
Sliding Shower Doorkit	1.3
Handles	1.4 - 1.5
Knobs and Overpanel Clamps	1.6
Glass Shelves	1.7
Channels and End Caps	1.8
P.V.C. Shower Seals	1.9
Support Headers	1.10
Indicator Locks For Pivot Doors	1.11
Indicator Locks For Sliding Doors	1.12
Shelf Clamps and Brackets	1.13

Product Setout Details

Elite Hinge Cutout Details	1.14
Designer Hinge Cutout Details	1.15
Handle Setout Details	1.16
Typical Hinged Shower Setout Details	1.17 - 1.23
Typical Sliding Shower Setout Details	1.24 - 1.29

WAIMAKARIRI DISTRICT COUNCIL
AMENDED Plan and/or Specifications APPROVED
BC200635.02 23/12/2021 brendam
Change acrylic showers to tiled showers to both

Ex Auckland Store. All prices exclude G.S.T.

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 97 of 125
Building Consent BC200635.02
Received 20/12/2021

METRO
Frameless Glass Systems

5 Lady Fisher Place,
Highbrook, Auckland
PO Box 58 144 Botany Auckland 2163

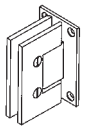
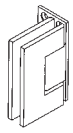
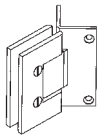
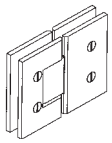
P 09 927 3000
F 09 274 1100
W www.metroglass.co.nz

Merchant Price List

SHOWER COMPONENTS

Elite Hinges

Specify 8mm or 10mm glass thickness

Product	Code	Description	Polished Chrome	Satin Chrome
	MF1	Wall Fix Hinge Standard mounting plate		
	MF1-L	Wall Fix Hinge Single sided mounting plate 37mm wide back plate 4 screw wall fixing		
	MF1-L3	Wall Fix Hinge Single sided mounting plate 50mm wide back plate 3 screw wall fixing		
	MF1-XL	Wall Fix Hinge Single sided mounting plate 62mm wide back plate 4 screw wall fixing		
	MF1-90	Wall Fix Hinge 90° mounting plate		
	MF2	Glass to Glass Fix Hinge		

For Glass Cutout and Hinge Details refer page 1.14 to 1.15
For Typical Shower Setout Details refer pages 1.17 to 1.23

Ex Auckland Store. All prices exclude G.S.T.

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 98 of 125
Building Consent BC200635.02
Received 20/12/2021
1.2

METRO
Frameless Glass Systems

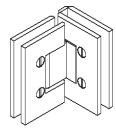
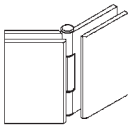
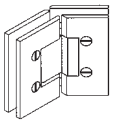
5 Lady Fisher Place,
Highbrook, Auckland
PO Box 58 144 Botany Auckland 2163

P 09 927 3000
F 09 274 1100
W www.metroglass.co.nz

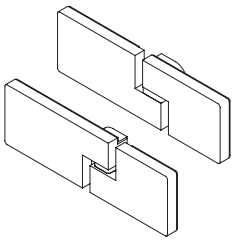
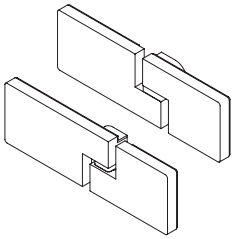
Merchant Price List

SHOWER COMPONENTS

Elite Hinges

Product	Code	Description	Polished Chrome	Satin Chrome
	MF2-90	Glass to Glass Fix Hinge 90° Angle		
	MF2-BF	Glass to Glass Bifold Hinge 180° Angle		
	MF2-135	Glass to Glass Fix Hinge 135° angle		
	MF2-SP	Glass to Glass Fix Hinge Custom angles from 125° to 180°		

Designer Hinges

Product	Code	Description	Polished Chrome
	MF2DL	Glass to Glass Fix Hinge for left hung doors. Suitable for 8mm glass only. Max door weight 40kg.	
	MF2DR	Glass to Glass Fix Hinge for right hung doors. Suitable for 8mm glass only. Max door weight 40kg.	

Ex Auckland Store. All prices exclude G.S.T.

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 99 of 125
Building Consent BC200635.02
Received 20/12/2021

METRO
Frameless Glass Systems

5 Lady Fisher Place,
Highbrook, Auckland
PO Box 58 144 Botany Auckland 2163

P 09 927 3000
F 09 274 1100
W www.metroglass.co.nz

Merchant Price List

SHOWER COMPONENTS

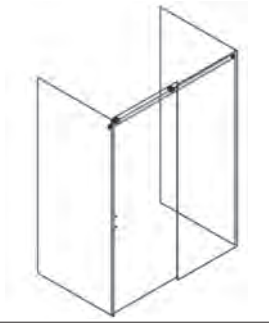
Ozone Sliding Shower Doorkit

Suits 8mm or 10mm glass thickness.

For doors up to 45kg in weight.

Each set contains: Track, Track fixing bracket, Hangers, Anti jump buttons, Side Panel fixing brackets, wheels, Stops & Guide.

Finish Bright Polished Stainless Steel.

Product	Code	Description	Price
	OTR-2000	Glass to Wall Fixing Set For showers up to 2000mm OA Width See page 1.25 for Typical Setout Detail	
	OTR-2000	Wall to Wall Fixing Set For showers up to 2000mm OA Width See page 1.27 for Typical Setout Detail	
	OTR-2000	Glass to Glass Fixing Set For showers up to 2000mm OA Width See page 1.29 for Typical Setout Detail	
	OTR-2000B	Additional button supports for OTR-2000 Shower	

Kits are sent out with all components to make any configuration above. Excluding channel and handle.
For Typical Shower Setout Details refer pages 1.24 to 1.29

Ex Auckland Store. All prices exclude G.S.T.

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 100 of 125
Building Consent BC200635.02
Received 20/12/2021

METRO
Frameless Glass Systems

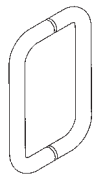
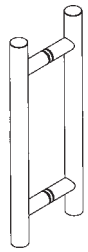
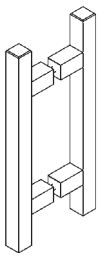
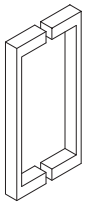
5 Lady Fisher Place,
Highbrook, Auckland
PO Box 58 144 Botany Auckland 2163

P 09 927 3000
F 09 274 1100
W www.metroglass.co.nz

Merchant Price List

SHOWER COMPONENTS

Glasstech Stainless Steel Handles

Product	Code	Description	PSS	SSS
	G.T-250	D Pull Handle 25mm diameter Stainless Steel 250mm hole centres 12mm hole diameter		
	G.T-FR150	Fineline Round Pull Handle 19mm diameter Stainless Steel 250mm long x 150mm hole centres 10mm hole diameter		
	G.T-FR250	Fineline Round Pull Handle 25mm diameter Stainless Steel 350mm long x 250mm hole centres 10mm hole diameter		
	G.T-FS150	Fineline Square Pull Handle 19mm x 19mm Square Section Stainless Steel 250mm long x 150mm hole centres 10mm hole diameter		
	G.T-FS250	Fineline Square Pull Handle 19mm x 19mm Square Section Stainless Steel 350mm long x 250mm hole centres 10mm hole diameter		
	G.T-RA250	Rectangular Pull Handle 20mm x 40mm Rectangle Section Stainless Steel 270mm long x 250mm hole centres 10mm hole diameter		
	G.T-Q 250	Rectangular Pull Handle 10mm x 20mm Rectangle Section Stainless Steel 270mm long x 250mm hole centres 10mm hole diameter		

For Typical Setout Details refer pages 1.16

PSS - Polished Stainless Steel
SSS - Satin Stainless Steel

Ex Auckland Store. All prices exclude G.S.T.

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 101 of 125
Building Consent BC200635.02
Received 20/12/2021

METRO
Frameless Glass Systems

5 Lady Fisher Place,
Highbrook, Auckland
PO Box 58 144 Botany Auckland 2163

P 09 927 3000
F 09 274 1100
W www.metroglass.co.nz

Merchant Price List

SHOWER COMPONENTS

Handles

Product	Code	Description	PSS	SSS
	MD250	Delta Double Pull Handle Set 250mm hole centres 12mm diameter holes		

For Typical Setout Details refer pages 1.16

Forged Stainless Steel Handles

Product	Code	Description	PSS	SSS
	CURVE 210	Curve Handle 235mm long. 210mm hole centres 12mm diameter holes		
	WAVE 210	Wave Handle 235mm long. 210mm hole centres 12mm diameter holes		

PSS - Polished Stainless Steel
SSS - Satin Stainless Steel

*Powder coat colour as per standard range as stated on page 1.8 of this price list.

Ex Auckland Store. All prices exclude G.S.T.

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 102 of 125
Building Consent BC200635.02
Received 20/12/2021

METRO
Frameless Glass Systems

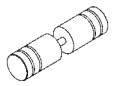
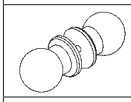
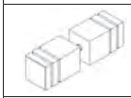
5 Lady Fisher Place,
Highbrook, Auckland
PO Box 58 144 Botany Auckland 2163

P 09 927 3000
F 09 274 1100
W www.metroglass.co.nz

Merchant Price List

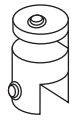
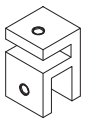
SHOWER COMPONENTS

Plated Brass Knobs & Components

Product	Code	Description	Polished Chrome	Satin Chrome	PSS	SSS
	MK25	Pull Knob Set 25mm diameter Use MW 30 washer for chrome/gold				
	MK38	Pull Knob Set 38mm diameter Use MW 43 washer for chrome/gold				
	MK60	Pull Knob Set 38mm diameter Use MW 30 washer for chrome/gold				
	MKS25	Pull Knob Set Square 25x25mm Square				
	MW 30	Highlight Washer 30mm/37mm/43mm diameter				
	MW 37					
	MW 43					

PSS - Polished Stainless Steel
SSS - Satin Stainless Steel

Over Panel Clamp

Product	Code	Description	Polished Chrome
	H05598	Shower Overpanel Clamp - Round To suit 10mm shower to 6mm overpanel Chrome plate. 20mm diameter round profile.	
	H05598S	Shower Overpanel Clamp - Square To suit 10mm shower to 6mm overpanel Chrome plate. 20mm x 20mm square profile.	

*Powder coat colour as per standard range as stated on page 1.8 of this price list.

Ex Auckland Store. All prices exclude G.S.T.

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 103 of 125
Building Consent BC200635.02
Received 20/12/2021

METRO
Frameless Glass Systems

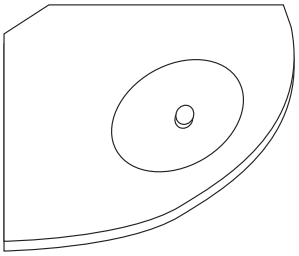
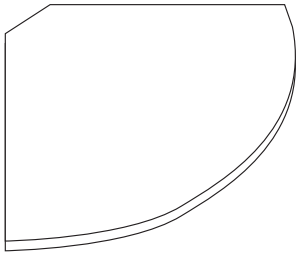
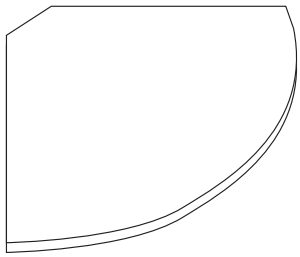
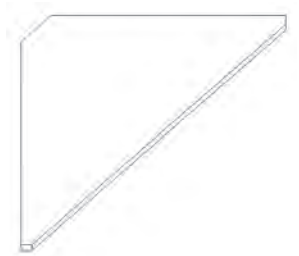
5 Lady Fisher Place,
Highbrook, Auckland
PO Box 58 144 Botany Auckland 2163

P 09 927 3000
F 09 274 1100
W www.metroglass.co.nz

Merchant Price List

SHOWER COMPONENTS

Glass Shelves

Product	Code	Description	Price
	GS200SD	Corner Shelf with Soap Dish 200 x 200 x 10mm Low Iron Toughened Glass	
	GS250SD	Corner Shelf with Soap Dish 250 x 250 x 10mm Low Iron Toughened Glass	
	GS200	Corner Shelf 200 x 200 x 10mm Clear Toughened Glass	
	GS200/S	Corner Shelf 200 x 200 x 10mm Low Iron Toughened Glass	
	GS250	Corner Shelf 250 x 250 x 10mm Clear Toughened Glass	
	GS250/S	Corner Shelf 250 x 250 x 10mm Low Iron Toughened Glass	
	GSA200	Angled Corner Shelf 200 x 200 x 10mm Clear Toughened Glass	
	GSA250	Angled Corner Shelf 250 x 250 x 10mm Clear Toughened Glass	

Ex Auckland Store. All prices exclude G.S.T.

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 104 of 125
Building Consent BC200635.02
Received 20/12/2021

METRO
Frameless Glass Systems

5 Lady Fisher Place,
Highbrook, Auckland
PO Box 58 144 Botany Auckland 2163

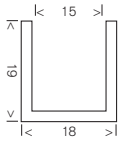
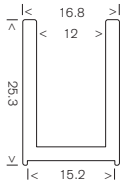
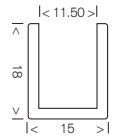
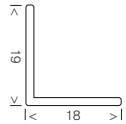
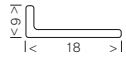
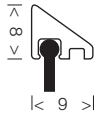
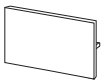
P 09 927 3000
F 09 274 1100
W www.metroglass.co.nz

Merchant Price List

SHOWER COMPONENTS

Channels and End Caps

All prices per metre

Product	Code	Description	Bright Silver Anodised	Natural Silver Anodised	Powder Coat*
	CS18	Channel Section 19 x 18 Stock lengths 2100mm and 3000mm Cut lengths			
	CS17	Channel Section 25 x 17 2.4mm wall thickness for increased strength and reduced bowing. Raised lip hides tape/silicone and prevents silicone leakage. Stock length 2500mm.			
	CS15	Channel Section 18 x 15 Stock length 3000mm Cut lengths			
	AS18	Angle Section 19 x 15 Stock length 2500mm Cut lengths			
	AS6	Angle Section 6 x 18 Water Bar Stock length 1400mm Cut lengths			
	HR1	Half Round Water Bar Stock length 1400mm Cut lengths			
	WD1	Water Deflector Complete with felt Stock length 1400mm Cut lengths			
	CC18	Channel End Cap To suit CS18 channel			
	CC45	Channel End Cap To suit 45° mitre CS18 channel			
	CC17	Channel End Cap To suit CS17 channel			
	CC15	Channel End Cap To suit CS15 channel			

***Note:** The powder coat price list is based on the following standard colours – **Gloss White, Gloss Black & Matt Black.**Special colours outside this range are subject to a powder coaters surcharge. Allow seven day lead time for all powder coat colours.

Ex Auckland Store. All prices exclude G.S.T.

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 105 of 125
Building Consent BC200635.02
Received 20/12/2021

METRO
Frameless Glass Systems

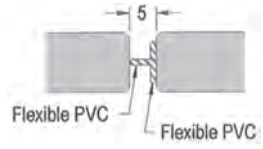
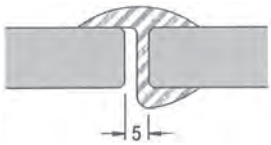
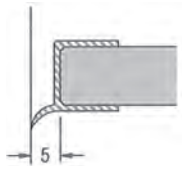
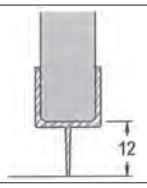
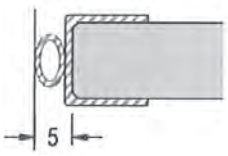
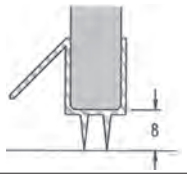
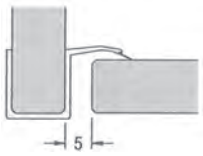
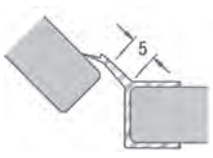
5 Lady Fisher Place,
Highbrook, Auckland
PO Box 58 144 Botany Auckland 2163

P 09 927 3000
F 09 274 1100
W www.metroglass.co.nz

Merchant Price List

SHOWER COMPONENTS

PVC Shower Seals

Product	Code	Description	All Prices Per Metre
	MT 1	Clear Water Seal PVC rigid back and flexible seal to suit 10mm glass Stock length 2000mm	
	MWS 10-1	Clear Water Seal PVC rigid stop to suit 10mm glass Stock length 2200mm Cut lengths	
	MWS 10-5	Clear Water Seal PVC rigid channel and flexible fin to suit 10mm glass Stock length 2200mm Cut lengths	
	MWS 10-6	Clear Water Seal PVC rigid channel and flexible seal to suit 10mm glass Stock length 2200mm Cut lengths	
	MWS 10-7	Clear Water Seal PVC rigid channel and flexible tube seal to suit 10mm glass Stock length 2200mm Cut lengths	
	MWS 10-10	Clear Water Seal PVC rigid channel / water deflector and dual flexible seals to suit 10mm glass. Stock length 2200mm Cut lengths	
	MWS 10-8	Clear Water Seal PVC rigid channel with flexible seal at 90º to suit 10mm glass. Stock length 2200mm Cut lengths	
	MWS 10-9	Clear Water Seal PVC rigid channel with flexible seal at 135º to suit 10mm glass. Stock length 2200mm Cut lengths	

NOTE: Clearances shown for water seals are only a guide

Ex Auckland Store. All prices exclude G.S.T.

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 106 of 125
Building Consent BC200635.02
Received 20/12/2021

METRO
Frameless Glass Systems

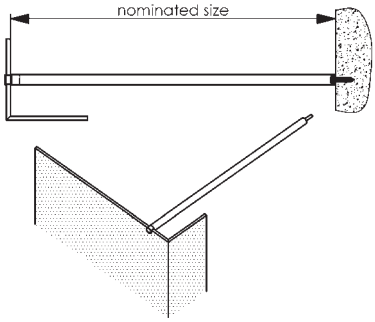
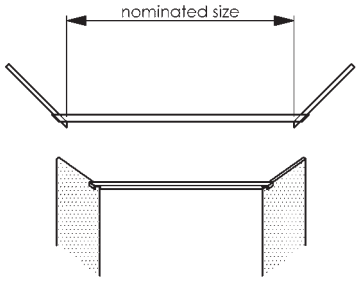
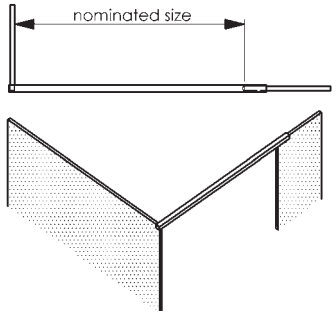
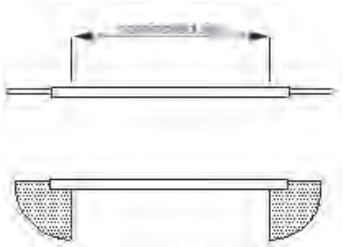
5 Lady Fisher Place,
Highbrook, Auckland
PO Box 58 144 Botany Auckland 2163

P 09 927 3000
F 09 274 1100
W www.metroglass.co.nz

Merchant Price List

SHOWER COMPONENTS

Frameless Shower Support Headers

Product	Code / Description	Polished Chrome	Satin Chrome
Type 6 	SH-T6 Wall to side panel support header. Sits over glass 25mm diameter rod. Specify length and glass thickness. Manufactured to custom sizes up to 1200mm long.		
Type 3 	SH-T3 Quadrant support header sits over glass. 16 x 16 square section. Specify opening and glass thickness. Manufactured to custom sizes up to 1200mm long.		
Type 1 	SH-T1 Side panel to return support header. Sits over glass 16 x 16 square section. Specify opening size and glass thickness. Manufactured to custom sizes up to 1200mm long.		
Type 4 	SH-T4 Inline side panel to side panel header. Sits over glass 16 x 16 square section. Specify opening size and glass thickness. Manufactured to custom sizes up to 1200mm long.		

Adjustable Support Headers also available – please enquire

Ex Auckland Store. All prices exclude G.S.T.

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 107 of 125
Building Consent BC200635.02
Received 20/12/2021

METRO
Frameless Glass Systems

5 Lady Fisher Place,
Highbrook, Auckland
PO Box 58 144 Botany Auckland 2163

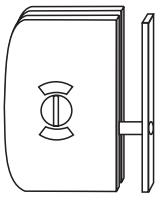
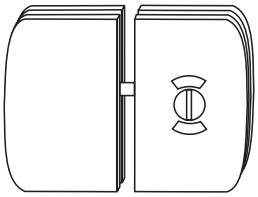
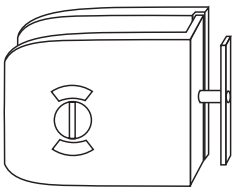
P 09 927 3000
F 09 274 1100
W www.metroglass.co.nz

Merchant Price List

FRAMELESS GLASS SHOWER COMPONENTS

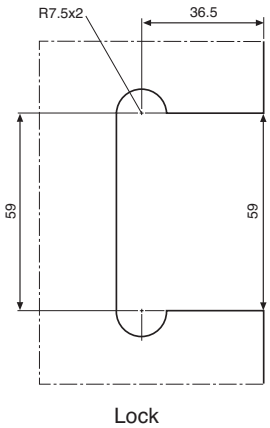
Glass Door Indicator Locks for Swing Doors

For Toilet and Bathroom Doors. To suit 8mm and 10mm glass.

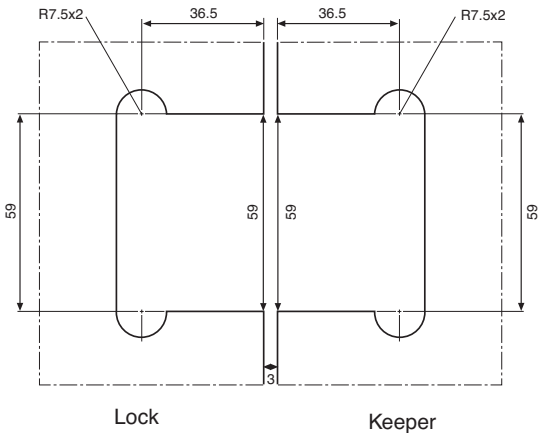
Product	Code	Description	Polished Chrome	Satin Chrome
	IL700C	Indicator Lock Door to Wall (Glass Cut Out Required)		
	IL701C	Indicator Lock Door to Sidepanel (Glass Cut Outs Required)		
	IL600C	Indicator Lock Door to Wall (No Glass Cut Out Required)		

GLASS PREPARATION

IL-700C



IL-701C



Ex Auckland Store. All prices exclude G.S.T.

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 108 of 125
Building Consent BC200635.02
Received 20/12/2021

METRO
Frameless Glass Systems

5 Lady Fisher Place,
Highbrook, Auckland
PO Box 58 144 Botany Auckland 2163

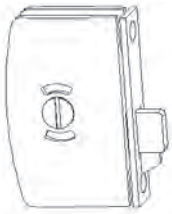
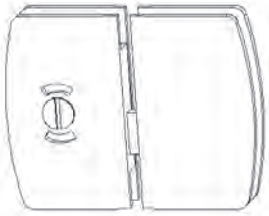
P 09 927 3000
F 09 274 1100
W www.metroglass.co.nz

Merchant Price List

FRAMELESS GLASS SHOWER COMPONENTS

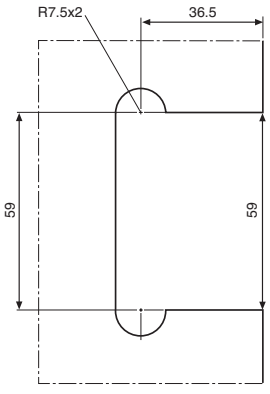
Glass Door Indicator Locks for Sliding Doors

For Toilet and Bathroom Doors. To suit 8mm and 10mm glass.

Product	Code	Description	Polished Chrome	Satin Chrome
	IL700C-H	Indicator Lock Door to Wall (Glass Cut Out Required)		
	IL701C-H	Indicator Lock Door to Sidepanel (Glass Cut Outs Required)		

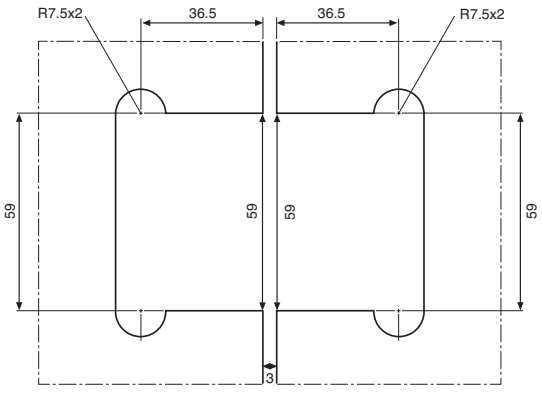
GLASS PREPARATION

IL-700C-H



Lock

IL-701C-H



Lock Keeper

Ex Auckland Store. All prices exclude G.S.T.

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 109 of 125

Building Consent BC200635.02
Received 20/12/2021

METRO
Frameless Glass Systems

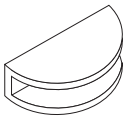
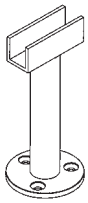
5 Lady Fisher Place,
Highbrook, Auckland
PO Box 58 144 Botany Auckland 2163

P 09 927 3000
F 09 274 1100
W www.metroglass.co.nz

Merchant Price List

SHOWER COMPONENTS

Glass Clamps

Product	Code	Description	Polished Chrome	Satin Chrome
	MB6	Shelf Bracket for 6mm shelf		
	MB8	Shelf Bracket for 8mm shelf		
	MB10	Shelf Bracket for 10mm shelf		
	MB12	Shelf Bracket for 12mm shelf		
	MV50 MV100	Upstand Support Bracket 50mm high 100mm high Special sizes P.O.A		

*Powder coat colour as per standard range as stated on page 1.8 of this pricelist.

Ex Auckland Store. All prices exclude G.S.T.

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 110 of 125
Building Consent BC200635.02
Received 20/12/2021

METRO
Frameless Glass Systems

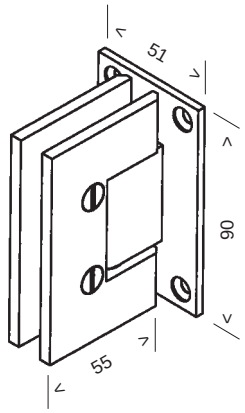
5 Lady Fisher Place,
Highbrook, Auckland
PO Box 58 144 Botany Auckland 2163

P 09 927 3000
F 09 274 1100
W www.metroglass.co.nz

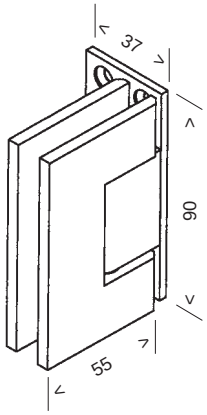
Set Out Details

ELITE SHOWER HINGES

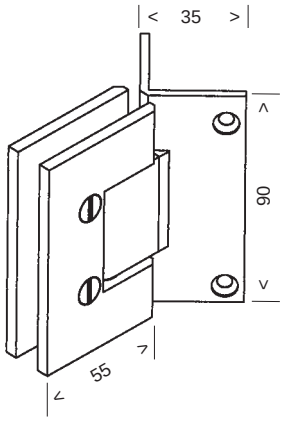
MF1
Wall Mount Hinge

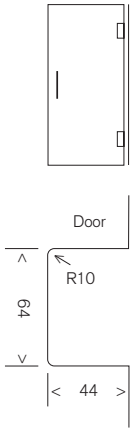


MF1-L
Single Side Wall Mount Hinge

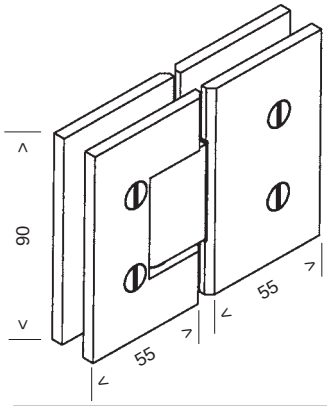


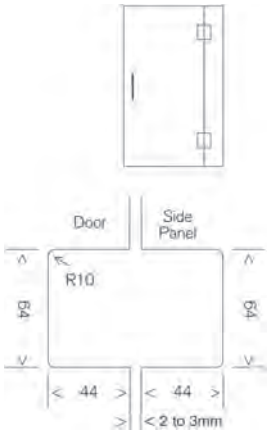
MF1-90
Wall Mount Hinge 90° Fixing



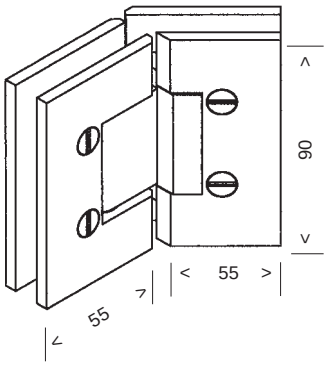


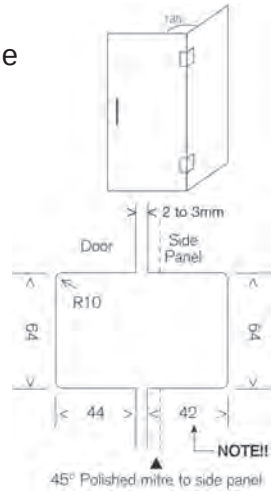
MF2
Glass to Glass Hinge



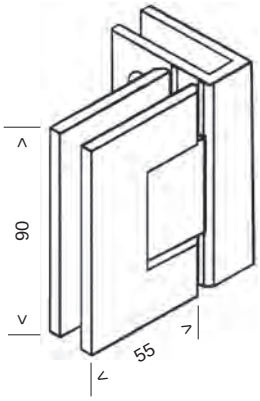


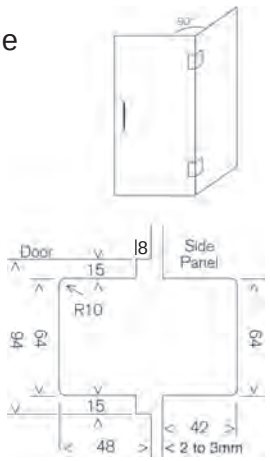
MF2-135
Glass to Glass 135° Hinge



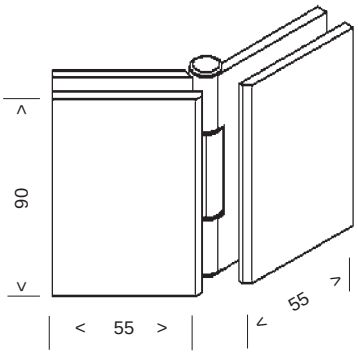


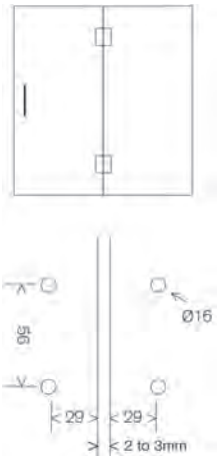
MF2-90
Glass to Glass 90° Hinge





MF2-BF
Glass to Glass BiFold Hinge





Maximum door weight is 35kg and maximum door width is 800mm for above hinges.

Ex Auckland Store. All prices exclude G.S.T.

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 111 of 125

Building Consent BC200635.02
Received 20/12/2021

METRO
Frameless Glass Systems

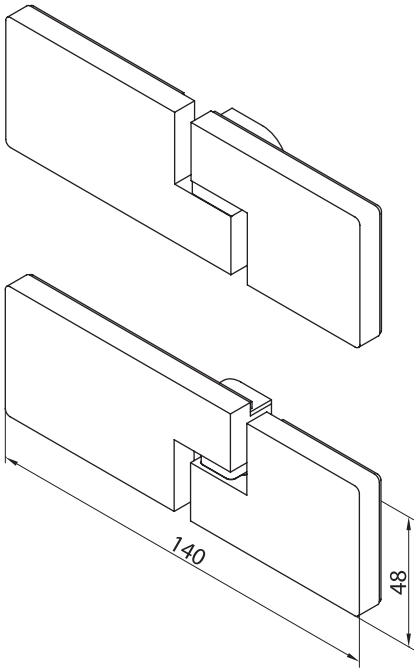
5 Lady Fisher Place,
Highbrook, Auckland
PO Box 58 144 Botany Auckland 2163

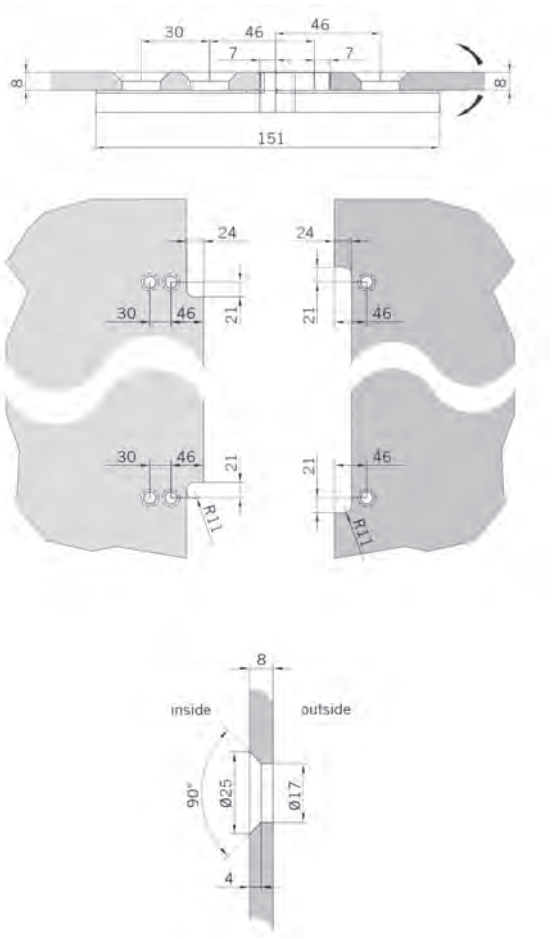
P 09 927 3000
F 09 274 1100
W www.metroglass.co.nz

Set Out Details

DESIGNER SHOWER HINGES

MF2DL/R
Glass to Glass Fix Hinge





Ex Auckland Store. All prices exclude G.S.T.

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 112 of 125
Building Consent BC200635.02
Received 20/12/2021

METRO
Frameless Glass Systems

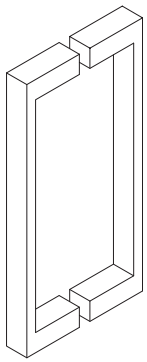
5 Lady Fisher Place,
Highbrook, Auckland
PO Box 58 144 Botany Auckland 2163

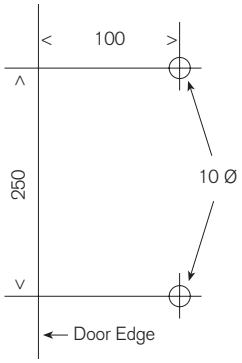
P 09 927 3000
F 09 274 1100
W www.metroglass.co.nz

Set Out Details

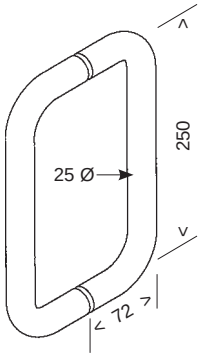
SHOWER HANDLES AND KNOBS

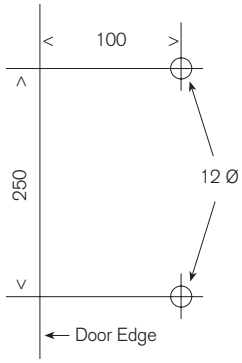
GT-Q250
Rectangular Pull Handle



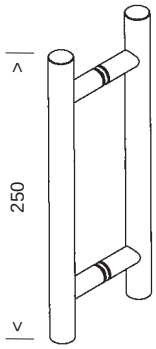


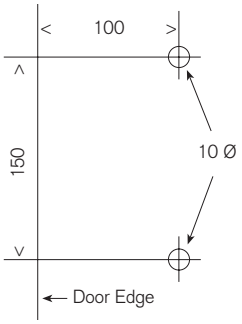
GT-250
Double D Handle



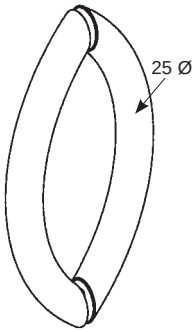


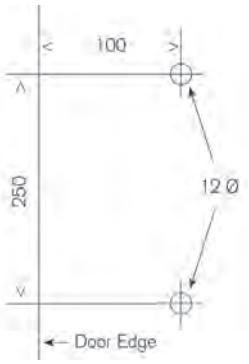
GTFR150 and GTFS150
Fineline Handle





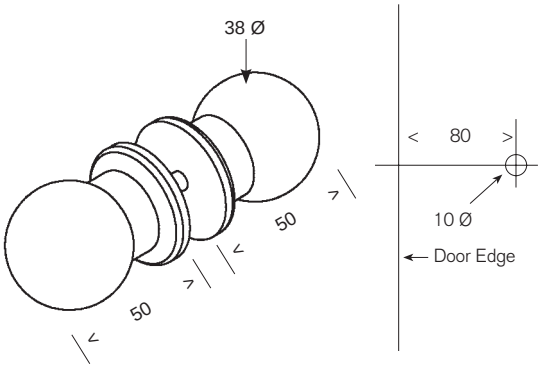
MD250
Delta Handle



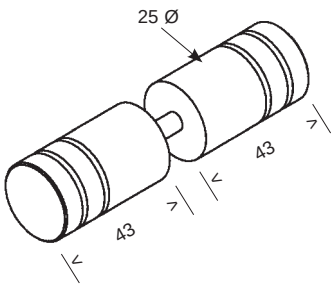


Knobs

MK38
Pull Knob Set

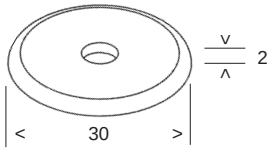


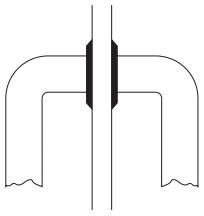
MK25
Pull Knob Set



MW30
Highlight Washer

To suit MK25 Knob Set
and GT and M250 Handles





Ex Auckland Store. All prices exclude G.S.T.

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 113 of 125
Building Consent BC200635.02
Received 20/12/2021

METRO
Frameless Glass Systems

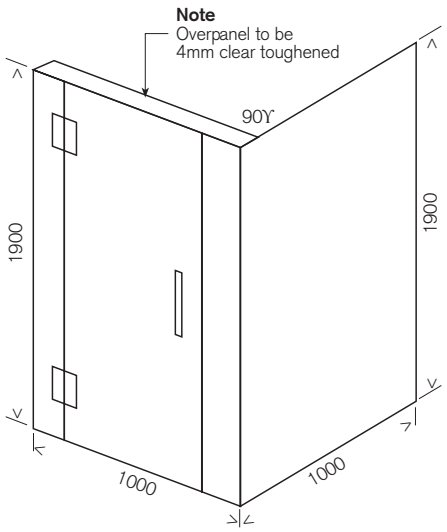
5 Lady Fisher Place,
Highbrook, Auckland
PO Box 58 144 Botany Auckland 2163

P 09 927 3000
F 09 274 1100
W www.metroglass.co.nz

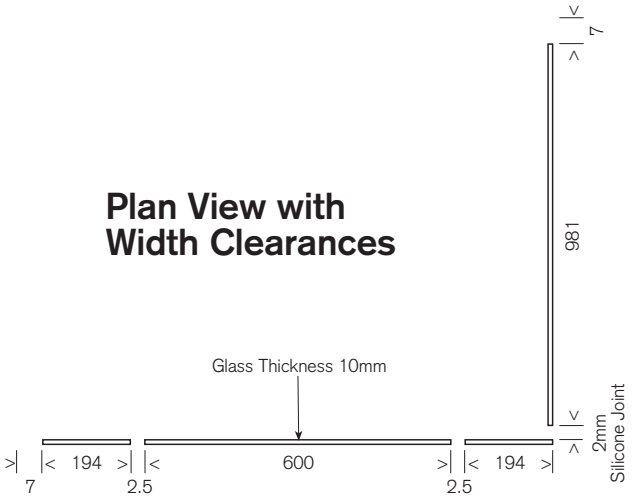
SHOWER SETOUT EXAMPLES

Shower Type: Glass to Glass Square

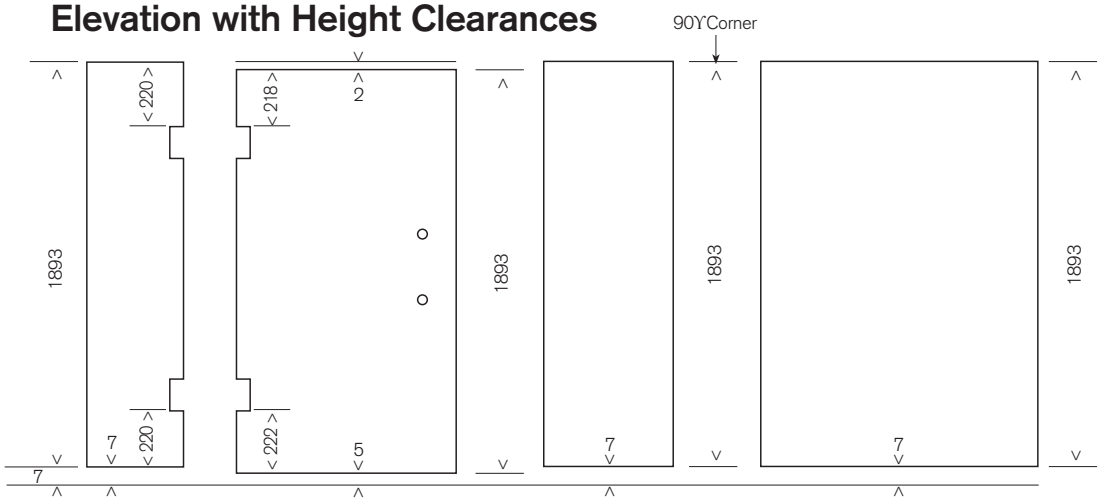
Overall Shower Sizes



Plan View with Width Clearances



Elevation with Height Clearances



Hardware List

- 2 x MF2 Hinges
- 5.5m x CS18 Channel
- 1 x 600mm WD1 Water Deflector
- 1 x Pair Handles (customer's selection)
- 2 x CC Channel End Caps

If a water bar is to be used under the door, allow an additional 5mm clearance under door.

Ex Auckland Store. All prices exclude G.S.T.

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 114 of 125
Building Consent BC200635.02
Received 20/12/2021

METRO
Frameless Glass Systems

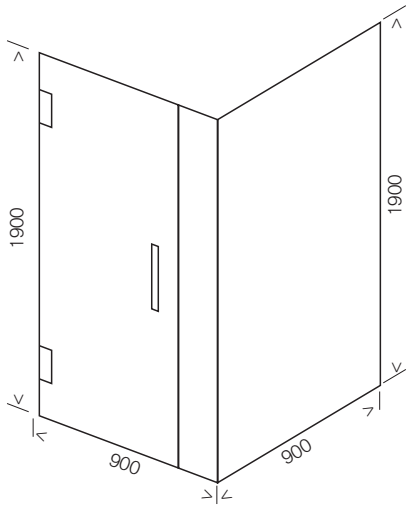
5 Lady Fisher Place,
Highbrook, Auckland
PO Box 58 144 Botany Auckland 2163

P 09 927 3000
F 09 274 1100
W www.metroglass.co.nz

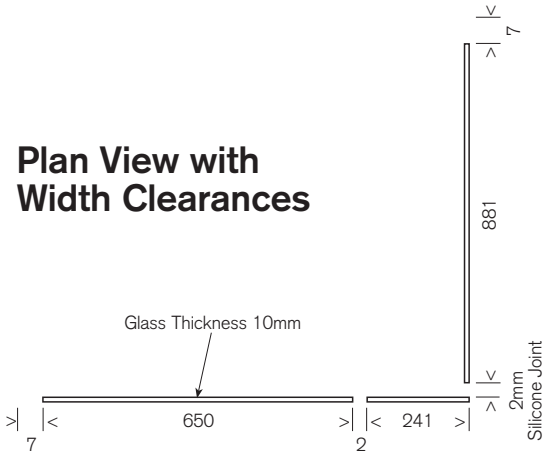
SHOWER SETOUT EXAMPLES

Shower Type: Wall Hung Square

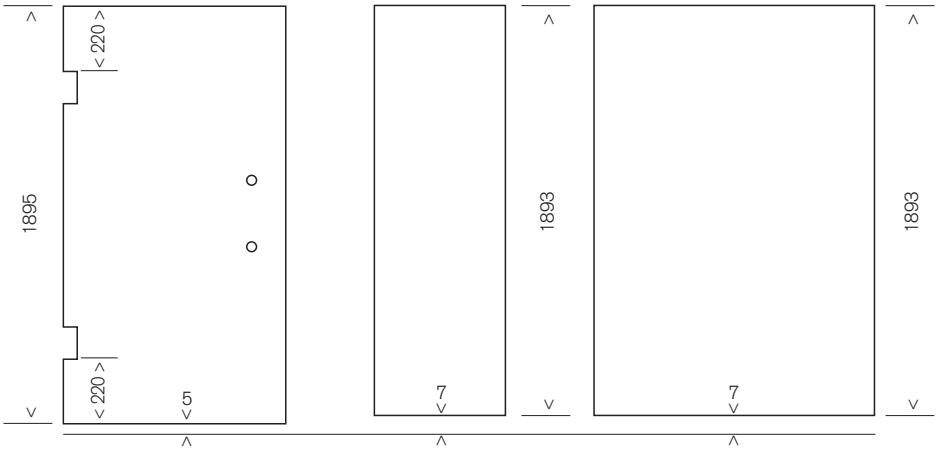
Overall Shower Sizes



Plan View with Width Clearances



Elevation with Height Clearances



Hardware List

- 2 x MF1 Hinges
- 3m x CS18 Channel
- 1 x 650mm WD1 Water Deflector
- 1 x Pair Handles (customer's selection)
- 1 x CC Channel End Cap

If a water bar is to be used under the door, allow an additional 5mm clearance under door.

Ex Auckland Store. All prices exclude G.S.T.

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 115 of 125
Building Consent BC200635.02
Received 20/12/2021

METRO
Frameless Glass Systems

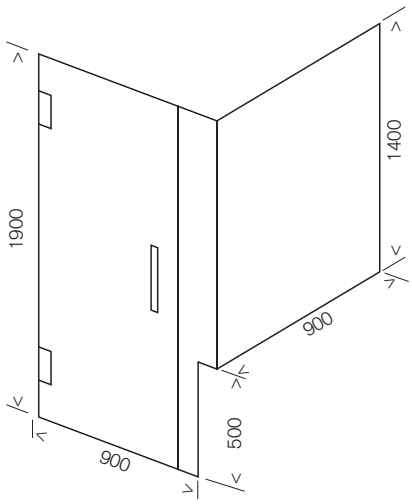
5 Lady Fisher Place,
Highbrook, Auckland
PO Box 58 144 Botany Auckland 2163

P 09 927 3000
F 09 274 1100
W www.metroglass.co.nz

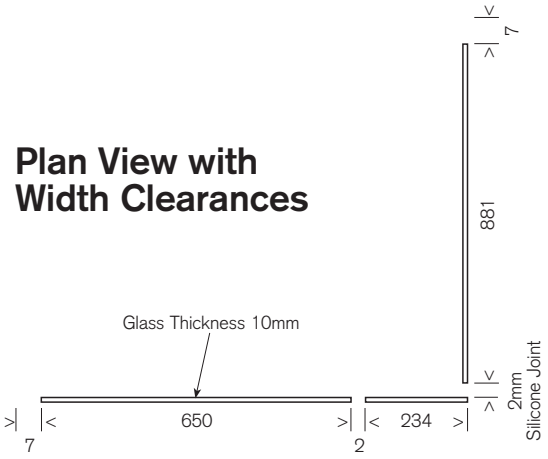
SHOWER SETOUT EXAMPLES

Shower Type: Wall Hung Square Stepped for Bath

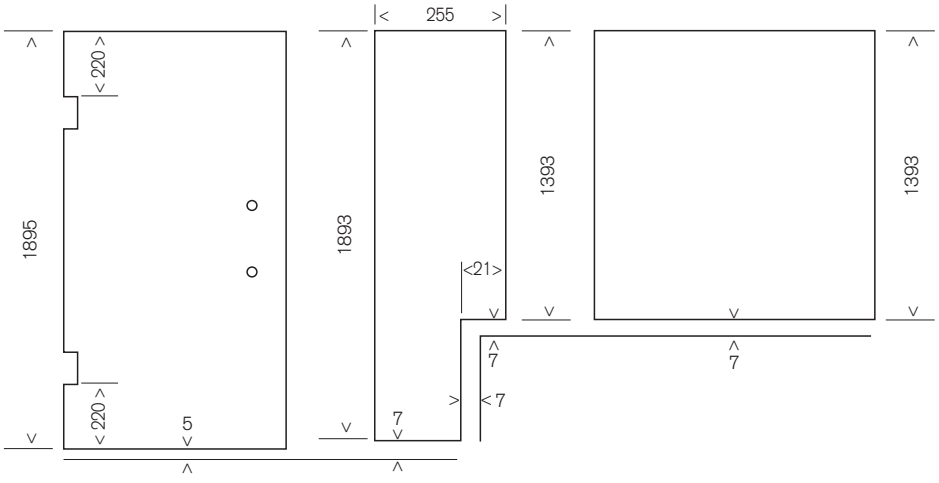
Overall Shower Sizes



Plan View with Width Clearances



Elevation with Height Clearances



Hardware List

- 2 x MF1 Hinges
- 3.5m x CS18 Channel
- 1 x 650mm WD1 Water Deflector
- 1 x Pair Handles (customer's selection)
- 1 x CC Channel End Cap

If a water bar is to be used under the door, allow an additional 5mm clearance under door.

Ex Auckland Store. All prices exclude G.S.T.

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 116 of 125

Building Consent BC200635.02
Received 20/12/2021

METRO
Frameless Glass Systems

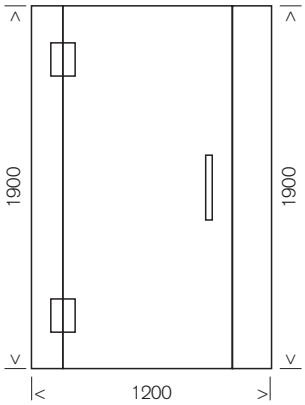
5 Lady Fisher Place,
Highbrook, Auckland
PO Box 58 144 Botany Auckland 2163

P 09 927 3000
F 09 274 1100
W www.metroglass.co.nz

SHOWER SETOUT EXAMPLES

Shower Type: Glass to Glass Inline

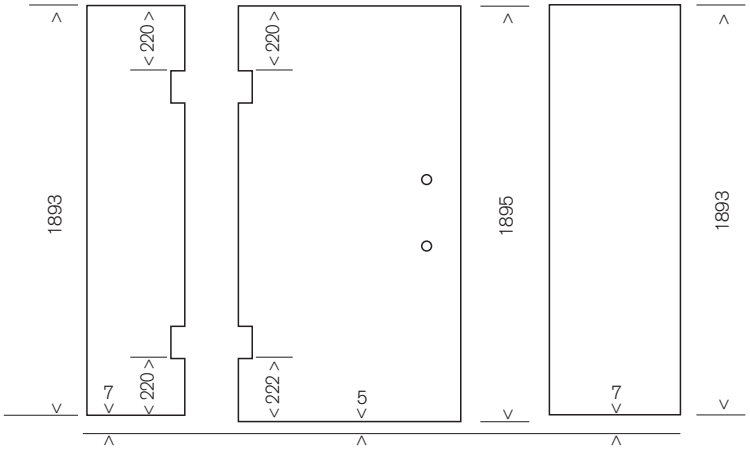
Overall Shower Sizes



Plan View with Width Clearances



Elevation with Height Clearances



Hardware List

- 2 x MF2 Hinges
- 4.5m x CS18 Channel
- 1 x 650mm WD1 Water Deflector
- 1 x Pair Handles (customer's selection)
- 2 x CC Channel End Cap

If a water bar is to be used under the door, allow an additional 5mm clearance under door.

Ex Auckland Store. All prices exclude G.S.T.

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 117 of 125
Building Consent BC200635.02
Received 20/12/2021

METRO
Frameless Glass Systems

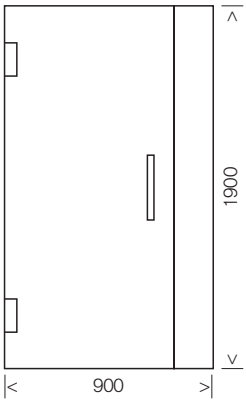
5 Lady Fisher Place,
Highbrook, Auckland
PO Box 58 144 Botany Auckland 2163

P 09 927 3000
F 09 274 1100
W www.metroglass.co.nz

SHOWER SETOUT EXAMPLES

Shower Type: Wall Hung Inline

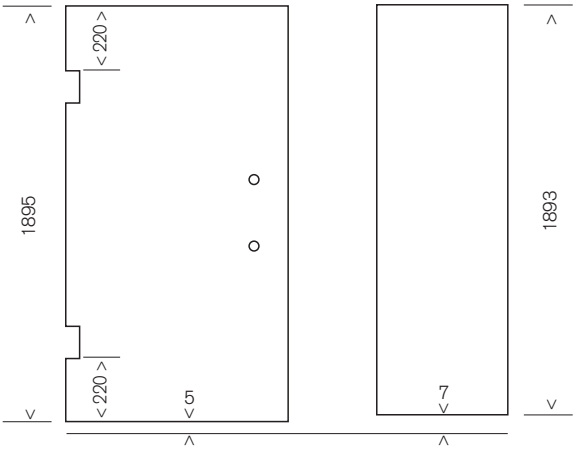
Overall Shower Sizes



Plan View with Width Clearances



Elevation with Height Clearances



Hardware List

- 2 x MF1 Hinges
- 2.5m x CS18 Channel
- 1 x 650mm WD1 Water Deflector
- 1 x Pair Handles (customer's selection)
- 1 x CC Channel End Cap

If a water bar is to be used under the door, allow an additional 5mm clearance under door.

Ex Auckland Store. All prices exclude G.S.T.

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 118 of 125
Building Consent BC200635.02
Received 20/12/2021

METRO
Frameless Glass Systems

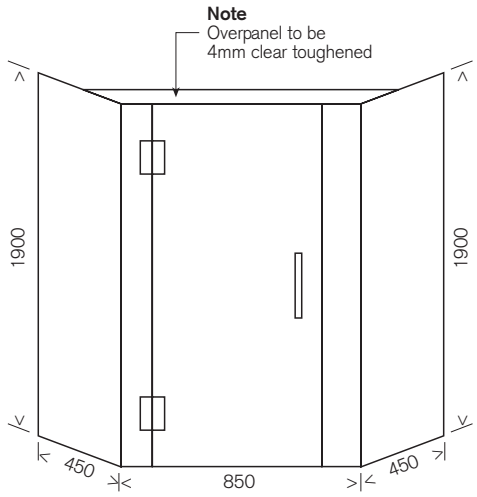
5 Lady Fisher Place,
Highbrook, Auckland
PO Box 58 144 Botany Auckland 2163

P 09 927 3000
F 09 274 1100
W www.metroglass.co.nz

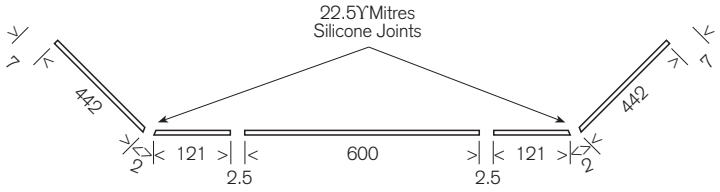
SHOWER SETOUT EXAMPLES

Shower Type: Glass to Glass Quadrant

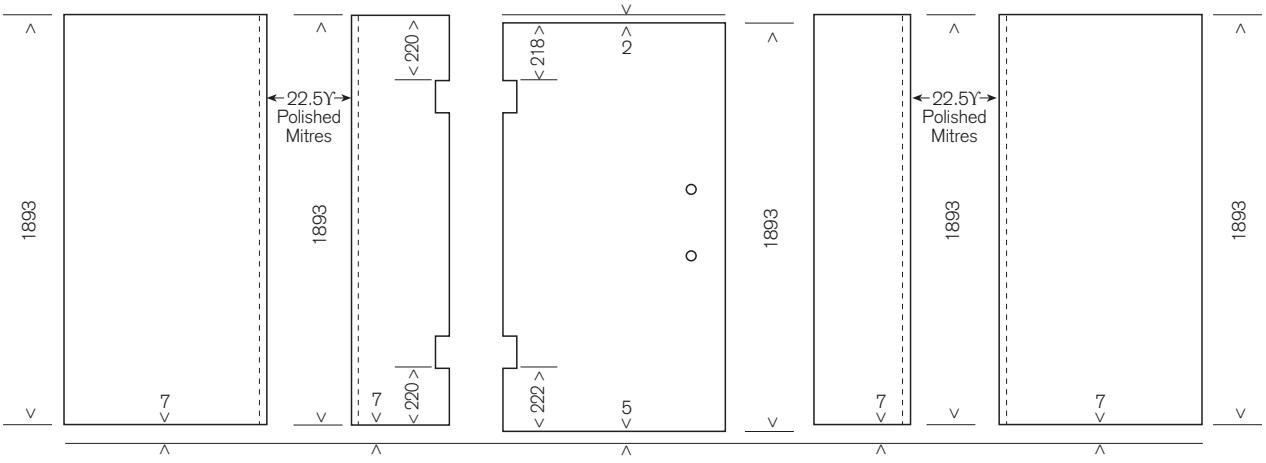
Overall Shower Sizes



Plan View with Width Clearances



Elevation with Height Clearances



Hardware List

- 2 x MF2 Hinges
- 5m x CS18 Channel
- 1 x 600mm WD1 Water Deflector
- 1 x Pair Handles (customer's selection)
- 2 x CC Channel End Cap

If a water bar is to be used under the door, allow an additional 5mm clearance under door.

Ex Auckland Store. All prices exclude G.S.T.

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 119 of 125
Building Consent BC200635.02
Received 20/12/2021

METRO
Frameless Glass Systems

5 Lady Fisher Place,
Highbrook, Auckland
PO Box 58 144 Botany Auckland 2163

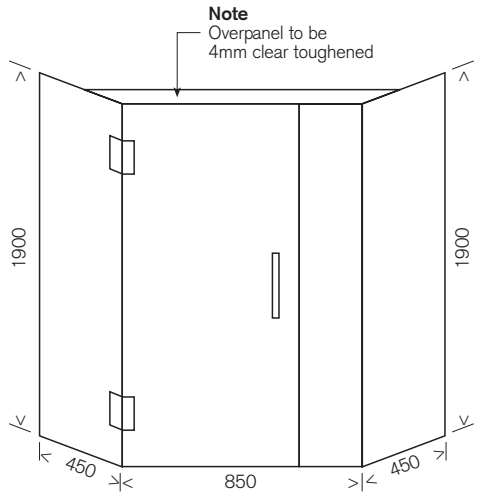
P 09 927 3000
F 09 274 1100
W www.metroglass.co.nz

Set Out Details

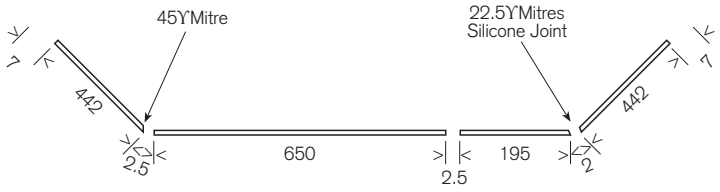
SHOWER SETOUT EXAMPLES

Shower Type: 135° Glass to Glass Quadrant

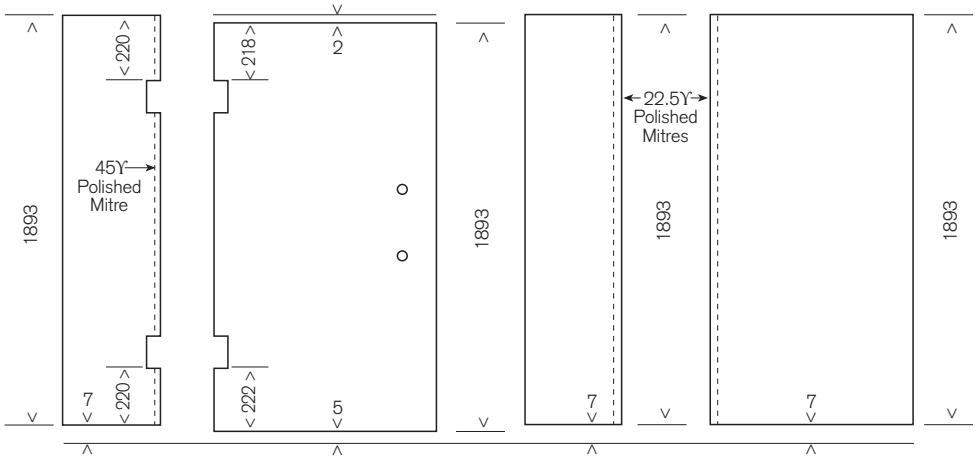
Overall Shower Sizes



Plan View with Width Clearances



Elevation with Height Clearances



Hardware List

- 2 x MF2-135 Hinges
- 5m x CS18 Channel
- 1 x 600mm WD1 Water Deflector
- 1 x Pair Handles (customer's selection)
- 1 x CC Channel End Cap

If a water bar is to be used under the door, allow an additional 5mm clearance under door.

Ex Auckland Store. All prices exclude G.S.T.

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 120 of 125
Building Consent BC200635.02
Received 20/12/2021

METRO
Frameless Glass Systems

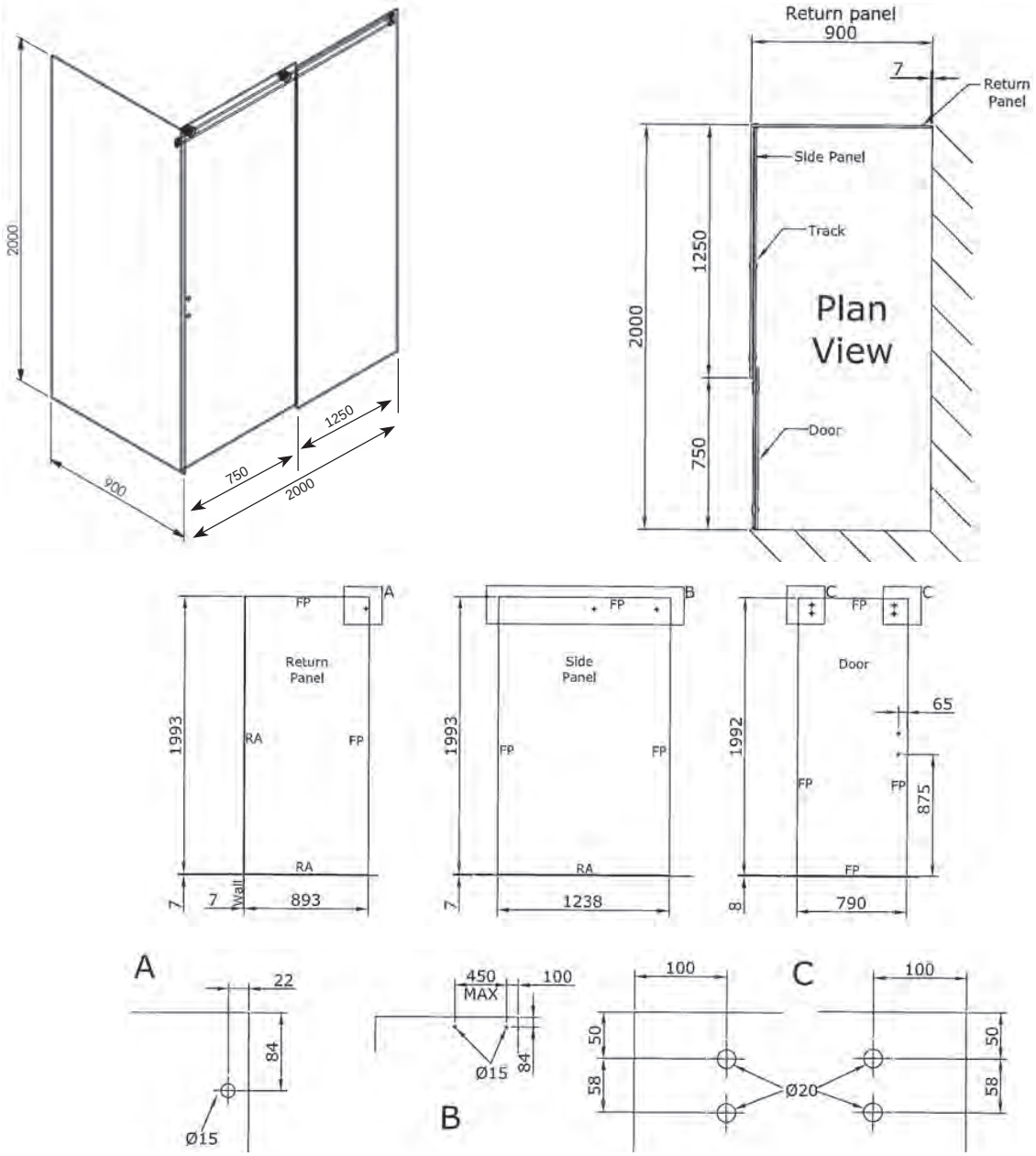
5 Lady Fisher Place,
Highbrook, Auckland
PO Box 58 144 Botany Auckland 2163

P 09 927 3000
F 09 274 1100
W www.metroglass.co.nz

Set Out Details

SHOWER SETOUT EXAMPLES

Sliding Shower OTR–2000 Glass To Wall – 1 Side Panel



Hardware List

- 1 x OTR2000 Sliding Door Kit
- CS18 Channel - sold separately
- AS6 Water Bar - sold separately
- CS18 End Cap - sold separately
- 1 x Handle or Knob, Customers Selection

Allow holes for handle or knob - sold separately

Note

Cut channel on side panel, less 20mm to allow door guide to clamp to glass at bottom of side panel.

Clear opening 655mm - subject to handle type.

Max door weight 45kgs.

Isometric shows a left hand door plan and glass drawings are for right hand door.

Ex Auckland Store. All prices exclude G.S.T.

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 121 of 125
Building Consent BC200635.02
Received 20/12/2021

METRO
Frameless Glass Systems

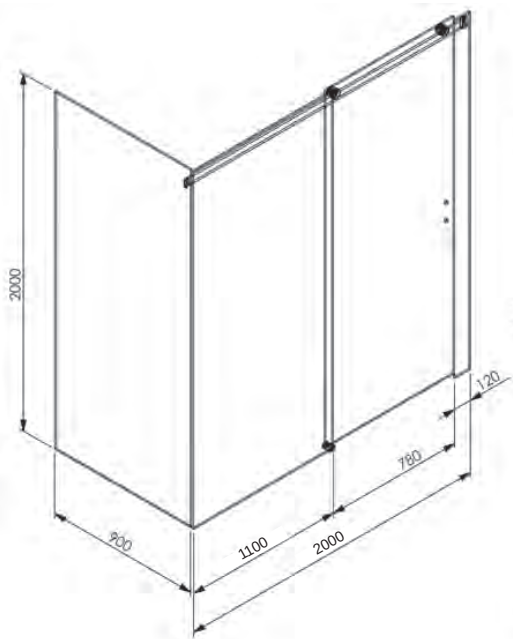
5 Lady Fisher Place,
Highbrook, Auckland
PO Box 58 144 Botany Auckland 2163

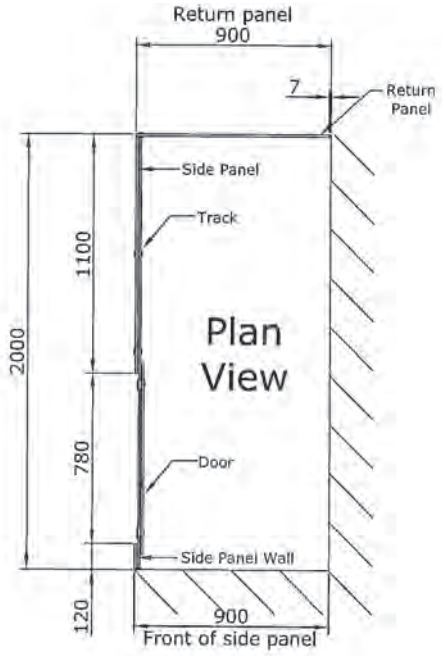
P 09 927 3000
F 09 274 1100
W www.metroglass.co.nz

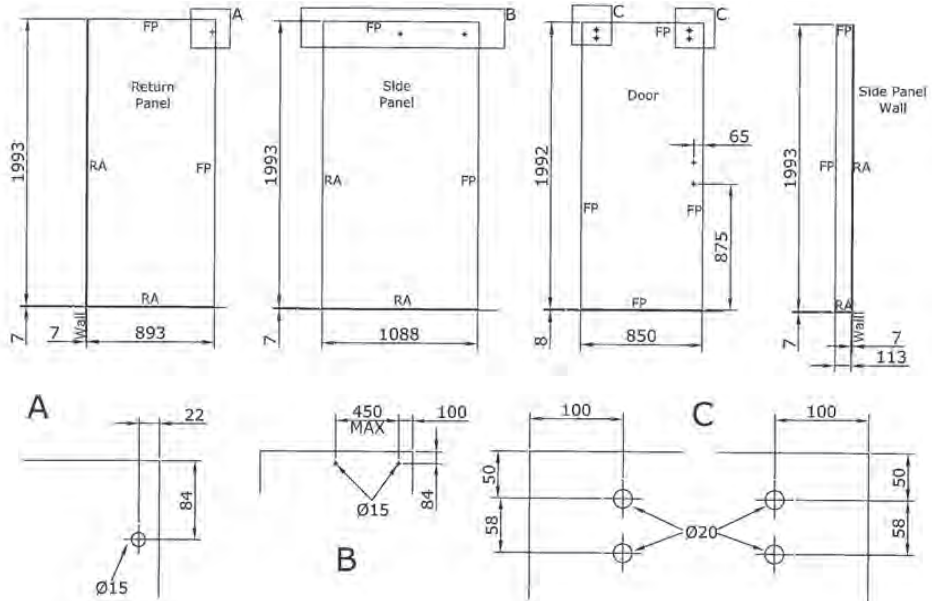
Set Out Details

SHOWER SETOUT EXAMPLES

Sliding Shower OTR–2000 Glass To Wall – 2 Side Panel







Hardware List

- 1 x OTR2000 Sliding Door Kit
- CS18 Channel - sold separately
- AS6 Water Bar - sold separately
- CS18 End Cap - sold separately
- 1 x Handle or Knob, Customers Selection

Allow holes for handle or knob - sold separately

Note

Cut channel on side panel, less 20mm to allow door guide to clamp to glass at bottom of side panel.

Clear opening 695mm - subject to handle type.

Max door weight 45kgs.

Ex Auckland Store. All prices exclude G.S.T.

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 122 of 125
Building Consent BC200635.02
Received 20/12/2021

METRO
Frameless Glass Systems

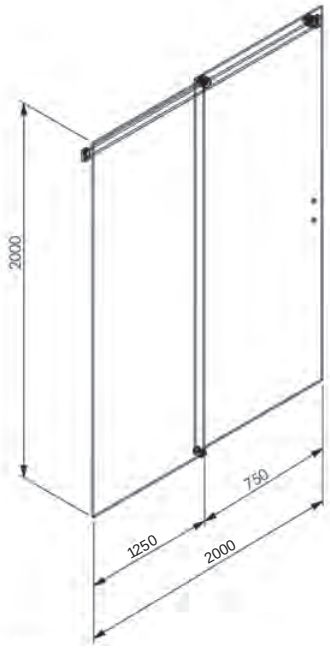
5 Lady Fisher Place,
Highbrook, Auckland
PO Box 58 144 Botany Auckland 2163

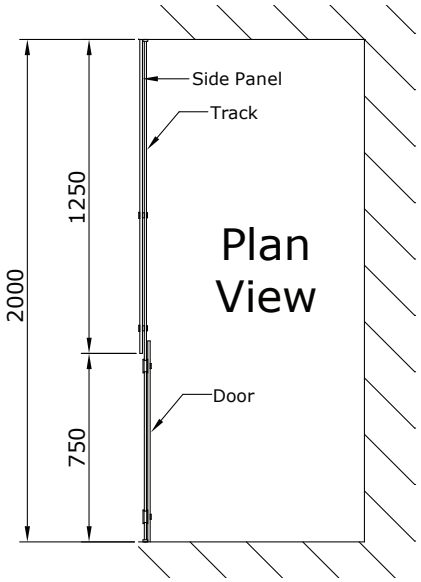
P 09 927 3000
F 09 274 1100
W www.metroglass.co.nz

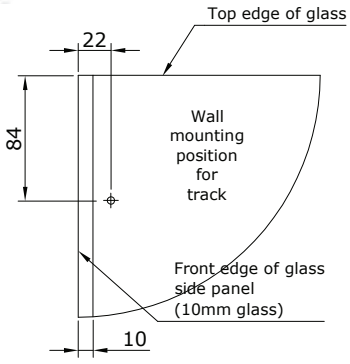
Set Out Details

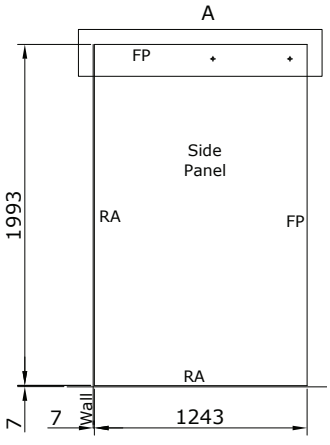
SHOWER SETOUT EXAMPLES

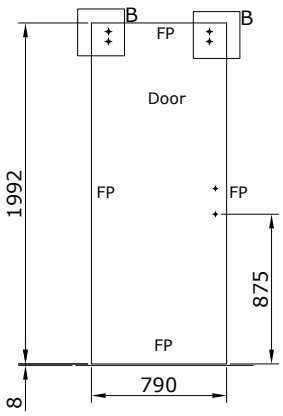
Sliding Shower OTR-2000 Wall To Wall – 1 Side Panel

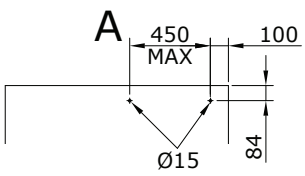


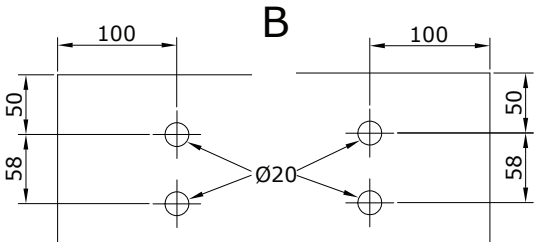












Hardware List

- 1 x OTR2000 Sliding Door Kit
- CS18 Channel - sold separately
- AS6 Water Bar - sold separately
- CS18 End Cap - sold separately
- 1 x Handle or Knob, Customers Selection

Allow holes for handle or knob - sold separately

Note

Cut channel on side panel, less 20mm to allow door guide to clamp to glass at bottom of side panel.

Clear opening 665mm - subject to handle type.

Max door weight 45kgs.

Ex Auckland Store. All prices exclude G.S.T.

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 123 of 125
Building Consent BC200635.02
Received 20/12/2021

METRO
Frameless Glass Systems

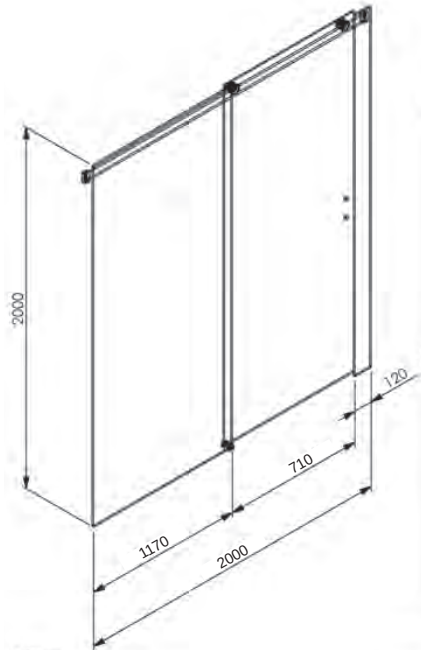
5 Lady Fisher Place,
Highbrook, Auckland
PO Box 58 144 Botany Auckland 2163

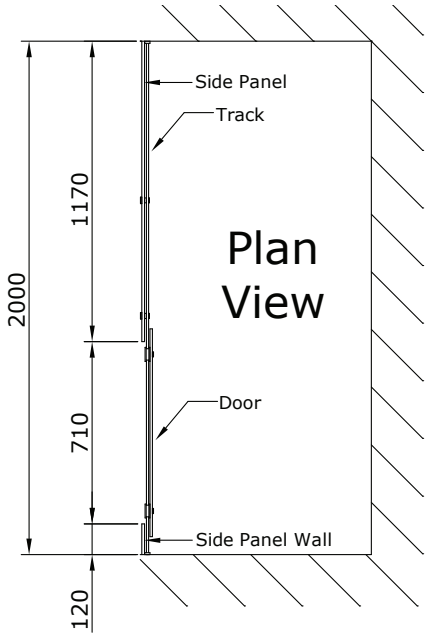
P 09 927 3000
F 09 274 1100
W www.metroglass.co.nz

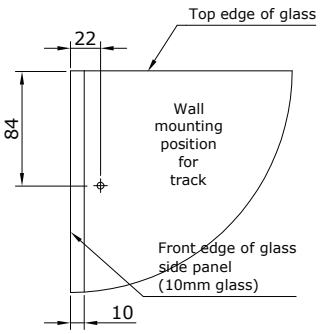
Set Out Details

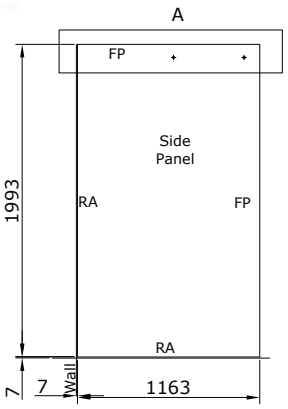
SHOWER SETOUT EXAMPLES

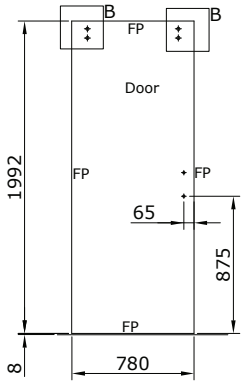
Sliding Shower OTR-2000 Wall To Wall – 2 Side Panel

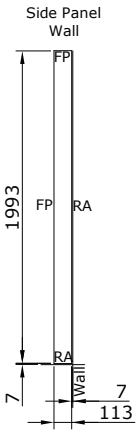


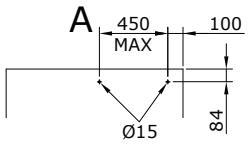


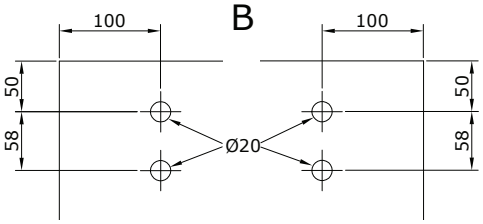












Hardware List

- 1 x OTR2000 Sliding Door Kit
- CS18 Channel - sold separately
- AS6 Water Bar - sold separately
- CS18 End Cap - sold separately
- 1 x Handle or Knob, Customers Selection

Allow holes for handle or knob - sold separately

Note

Cut channel on side panel, less 20mm to allow door guide to clamp to glass at bottom of side panel.

Clear opening 625mm - subject to handle type.

Max door weight 45kgs.

Ex Auckland Store. All prices exclude G.S.T.

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 124 of 125
Building Consent BC200635.02
Received 20/12/2021

METRO
Frameless Glass Systems

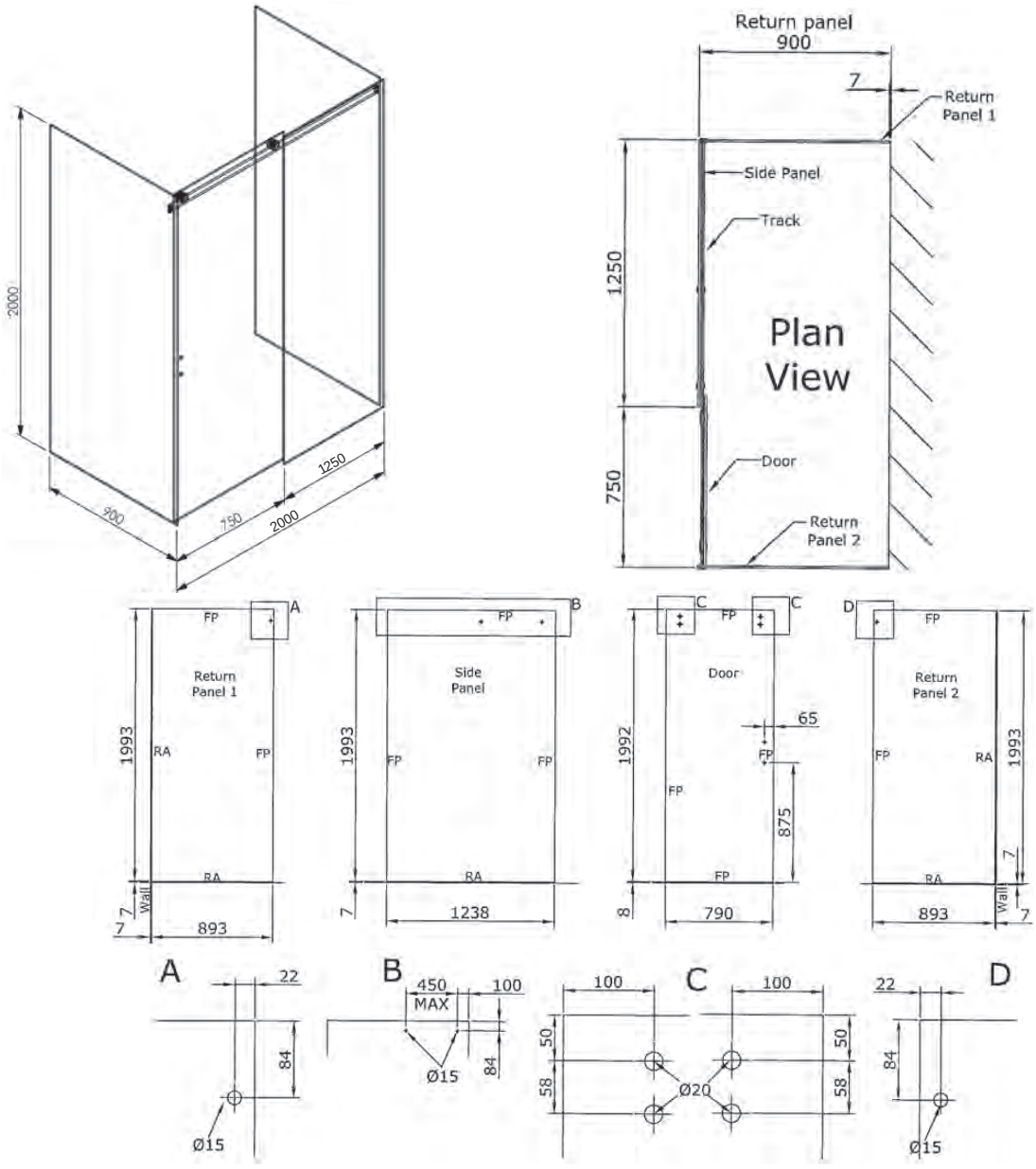
5 Lady Fisher Place,
Highbrook, Auckland
PO Box 58 144 Botany Auckland 2163

P 09 927 3000
F 09 274 1100
W www.metroglass.co.nz

Set Out Details

SHOWER SETOUT EXAMPLES

Sliding Shower OTR–2000 Glass To Glass – 1 Side Panel



Hardware List

- 1 x OTR2000 Sliding Door Kit
- CS18 Channel - sold separately
- AS6 Water Bar - sold separately
- CS18 End Cap - sold separately
- 1 x Handle or Knob, Customers Selection

Allow holes for handle or knob - sold separately

Note

Cut channel on side panel, less 20mm to allow door guide to clamp to glass at bottom of side panel.

Clear opening 665mm - subject to handle type.

Max door weight 45kgs.

Isometric shows a left hand door plan and glass drawings are for right hand door.

Ex Auckland Store. All prices exclude G.S.T.

AMENDMENT ISSUED BC200635.02 24/12/2021 - Page 125 of 125
Building Consent BC200635.02
Received 20/12/2021

METRO
Frameless Glass Systems

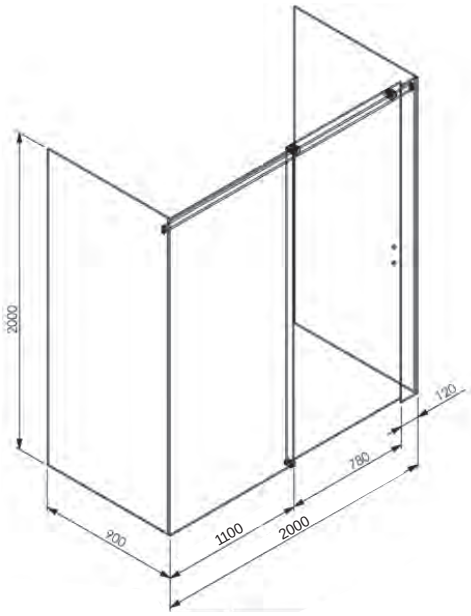
5 Lady Fisher Place,
Highbrook, Auckland
PO Box 58 144 Botany Auckland 2163

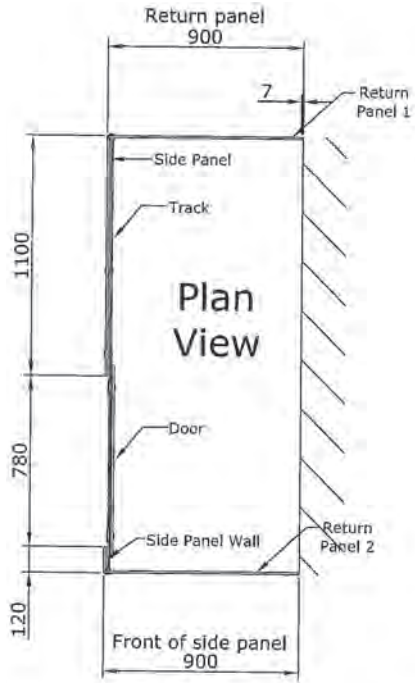
P 09 927 3000
F 09 274 1100
W www.metroglass.co.nz

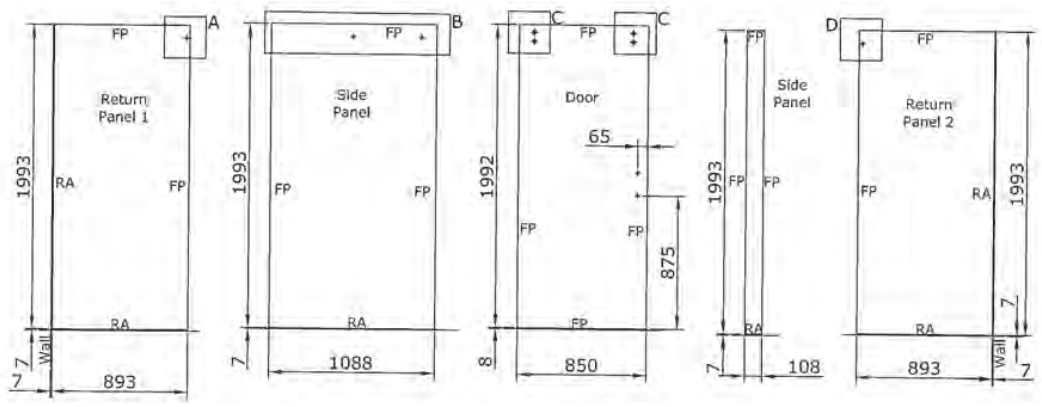
Set Out Details

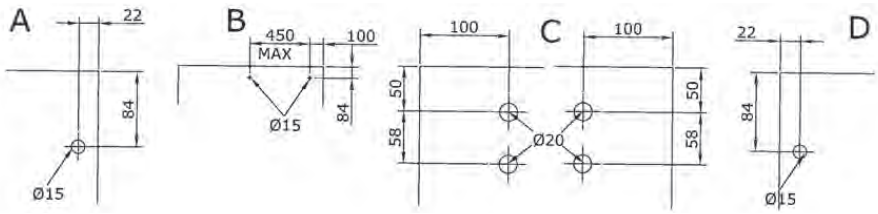
SHOWER SETOUT EXAMPLES

Sliding Shower OTR–2000 Glass To Glass









Hardware List

- 1 x OTR2000 Sliding Door Kit
- CS18 Channel - sold separately
- AS6 Water Bar - sold separately
- CS18 End Cap - sold separately
- 1 x Handle or Knob, Customers Selection

Allow holes for handle or knob - sold separately

Note

Cut channel on side panel, less 20mm to allow door guide to clamp to glass at bottom of side panel.

Clear opening 695mm - subject to handle type.

Ex Auckland Store. All prices exclude G.S.T.