

**COUNCIL
COPY**

SPECIFICATION

WORK TO BE DONE AND
MATERIAL TO BE USED FOR

BC ONLY

No. 82139

20 PADDOCKS LTD

177 OLD TAMPA ROAD

ROTORUA

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GIRAZUWINE



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DRAUGHTING SERVICES



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SECTION 1

PRELIMINARY AND GENERAL

PRELIMINARY AND GENERAL

This specification is of a general type covering all the basic requirements of the building. Should there be any words that do not pertain to this contract, eg unit instead of houses etc, the wording shall be read to mean this contract. All work is to comply with the Building Act 2004 the New Zealand Building Code 1992 and current New Zealand Standard specifications unless otherwise specified.

CONTRACT

This contract includes the supply and delivery of all materials, labour, tools, fittings, plant etc, necessary for the due and proper completion of the building shown on plans and herein specified in a thorough and workmanlike manner in strict accordance with the New Zealand Building Code and the territorial authority concerned. Amendments to, or new bylaws instituted by the territorial authority or new or special requirements after the date of tendering and which involve additional cost, will be carried out and such additional cost added to the contract.

BUILDING CONSENT AND NOTICES

Contractor to comply with labour and building laws of the district, to apply for and obtain the necessary building consents and pay all fees for the same. The contractor shall be responsible for giving of all notices to the territorial authority and for all works which require inspection and approval before they are covered in. Should any such notices not be given and works have to be uncovered, any expense caused by this shall be paid by the contractor for that particular works.

SITE

Tenderers shall visit the site to ascertain conditions as no extras will be allowed through failure to ascertain works required below and above ground.

PROVIDE AND FIX

The words "provide and fix" shall be construed to mean "provide and fix" where mentioned separately unless otherwise specified.

INSURANCE

The contractor is to take out a builder's risk insurance for a sufficient sum to cover the contract cost. This policy is to remain in force unless taken over by the owner. Proof of such insurance shall be lodged with the building owner.

MATERIALS AND WORKMANSHIP

The contractor shall provide all materials and labour of every description necessary, whether or not particularly noted or specified, needed for the completion of the building. All plant, haulage and cartage shall be allowed for the work carried out according to the true intent and meaning of the drawings and specifications. All workmanship must be careful and thorough and in accordance with normal trade practices and all materials to the approval of the territorial authority. Any specified materials non procurable when required and thus retarding progress of contract, may be substituted with others similar provided that such substituted materials conform to the territorial authority bylaws and are approved by the owners.

INTERPREATION

Materials shown and not specified must be of the kinds commonly used for the services they are intended to perform. Any figured dimensions shall be taken in preference to scale. Any difference between specification and plan, to be read as plans being right. Anything shown on plan and not mentioned in specifications and vice-versa and that is necessary to complete job to be read as being included in both.

STABILITY OF STRUCTURE

The contractor shall, in all cases, use proper care and diligence in bracing and supporting all parts of his work against damage by wind. He shall also support and protect the work from damage by water. His work shall at all times be self-supporting, absolutely strong and fully equal to resist all strains to which it may be subject.

LEVELS

The contractor shall check all levels on the site. It is the contractor's responsibility to confirm the accuracy of any levels.

SETTING OUT

The contractor shall perform all setting out and he shall be responsible for its accuracy and shall amend any errors without cost to the employer.

MAINTENANCE

Maintenance period is 365 days after the owner has taken possession. Any defects in materials, workmanship, or any part(s) that require replacing or adjusting which have been included in this contract shall be adjusted or replaced as specified in this specification at the contractor's own expense.

TEMPORARY CONVENIENCES

The contractor upon the works shall make provision for the installation of adequate toilets for the use of the workmen in accordance with the requirements of the local Environmental Health Officer. Such toilet shall be removed upon completion of the works.

WATER AND POWER

Allow for all temporary water and power connections from reticulation laid to the head of the drive, and remove on completion.

PROTECTION OF WORK

The contractor shall substantially cover and protect all parts of his work exposed to damage either during progress of the work or when same is finished and shall deliver the same done by him or his sub-contractors upon completion of the contract in a new, sound, clean and perfect condition.

VARIATION OF EXTRA WORKS

After the final approval of plans by the owner, no variation or extra works shall be carried out by the contractor expect with the written authority of the owner. Before such works are proceeded with, the owner shall pay for the same.

DAMAGE TO PROPERTY

The contractor shall provide for making good all damage to any adjoining buildings, footpaths, fences, right of ways, trees, shrubs, garden walls and all damage of every kind arising during or out of his works.

PROGRESS PAYMENTS

Progress payments shall be made at monthly intervals in accordance with the general conditions of the contract on receipt of the contractors written claim. The contractor shall also make written application for liens and maintenance moneys as these become due.

FLUCTUATION IN COST

If there should be either a rise or fall in the award of ruling rate of labour or price of materials between the date of the quotation and the date when such labour is employed or such materials are procured for this contract, then on final settlement a compensating adjustment of the contract price shall be made and the owner shall make such additional payment or receive such allowance from the contract price as such a rise or fall shall cause.

CLEANING

At the conclusion of the work, premises shall be careful cleaned out, windows washed and glass left free from scratches or paint, etc, and the entire building left in perfectly clean and immaculate condition for occupation. The site shall be generally tidied up and all signs of building debris removed.

HEALTH AND SAFETY

Refer to the requirements of the Health and Safety in Employment Act 1992. Comply with all relevant New Zealand safety legislation.

Take all practical steps to make the site and the contract works safe and to provide and maintain a safe working environment. Ensure that all those working on or visiting the site are aware of the rules governing site safety, are properly supervised and are not unnecessarily exposed to hazards.

Identify any significant hazards.

Maintain proper procedures for dealing with any emergencies that may arise. Immediately investigate accidents, identify their cause and maintain a register of accidents and serious harm. Provide a copy of any report which the contractor is required to make to a public authority on any accident which is associated with carrying out the contract works and results in serious harm to any person.

SECTION 6

CARPENTRY AND JOINERY

PRELIMINARY AND GENERAL

Refer to the preliminary and General section which also applies to this section of the work.

All timber to comply with NZSS 3631 for classification and grading National Grading Rules.

GENERAL

- (a) The whole of the timber shall be the best of all the several kinds specified free from shakes, sapwood, all large or loose knots, large gum streaks and shall be thoroughly seasoned and all timber including joinery, shall be put in hand immediately the contract is signed. Any timber not up to standard or warps excessively must be removed from the job on the instruction of the owner.
- (b) Care must be taken when ordering lengths of timber as no butts will be allowed where it is possible to avoid them.
- (c) Framing timber when delivered to the site shall be stacked on skids and if unseasoned shall be fillet stacked. Finishing lines and joinery shall be stacked in a similar manner and covered or stored inside the closed-in building.
- (d) All nails, screws and iron work used externally shall be galvanized. Junctions of all woodwork and concrete shall be separated by 3 ply Malthoid.
- (e) All exposed timber shall be planed sanded and primed before fixing and all inside work shall be hand-dressed and glass papered to a smooth surface. All nails shall be carefully punched and all bruises and tool marks shall be removed. All framing timber shall be gauged.
- (f) Provide totara grounds in concrete work for fittings or approved purpose made fixings.
- (g) All scantlings and thickness of timber in carpentry work and joinery are to be finished the given dimensions unless otherwise stated.

WORKMANSHIP

All work to comply with NZS 3604 2011 and the New Zealand Building Code unless otherwise stated.

- (a) All carpentry work shall be set up and constructed to the dimensions given. The carpenter shall set out and ensure the proper execution of the work carried out by other tradesmen and shall attend on and make good for all other trades. He shall provide and fix all necessary plant and temporary structure including formwork, centring, boxing, shoring, strutting, and scaffolding and shall remove them as required; he shall provide and maintain any temporary coverings for any finished work subject to likely damage; he shall ensure the property closure for the works during constructions and shall clean up on completion.
- (b) **Framing**
To existing walls when required. All work shall be according to the best trade practice. The framework shall be so arranged and will provide all necessary support and fixing for the linings, and all post beams, studs, joists and walings shall extend in one piece between supports and shall only be joined over solid bearings. Spacings of all framing shall be regular throughout and shall be to suit the sizes and standards of all linings and sheathings specified. Joints shall be constructed to transmit the loads and stresses to which they are subjected. Plates shall be joined by 3 kn and 6 kn connections and shall be double nailed to every stud. Framework shall be well anchored to foundations, the steel framework and the roof structure.

(c) **Finishing**

Finishing timbers generally shall be machine dressed, hand finished, free from blemishes, machine and hammer marks. Changes in direction shall be made by mitring or scribing. Butt ends shall be bored for nailing. Door frames shall be constructed with the jambs housed into the head and stops shall be mitred at corners. All beading and timber trim shall be scribed to irregular surfaces as required and shall be mitred at external angles. All linings shall be fixed with nails neatly punched ready for painting and polishings.

FRAMING SCHEDULE (Unless stated on plans)

Timber exposed to the weather to be Pinus Radiata H3 treated. All other framing shall be Pinus Radiata H1.2 treated (or other approved) unless specified otherwise. All framing shall be machine gauged.

(a) **Floor Framing**

Bearing plates Pine 90 x 70 or as set out in table 6 of NZS 3604.
Floor joists Pine 140x 45 at 600mm centres maximum (table 7.1).

(b) **Wall Framing**

Top and bottom plates	Pine	90 x 45/70x 45
Studs	Pine	90 x 45 at 600mm crs max: 70 x 45 at 600mm crs max.
Nogging	Pine	90 x 45 and 70 x 45 at 800mm max and to suit linings (Refer Bracing Sheets)
Bracing		
Lintels Over Openings	Pine	As NZS 3604 Table 8.9 to 8.13

(c) **Roof Framing**

Ceiling joists/rafters	Pine	COMPUTER TRUSSES AT 900cc 90 x 45 or as NZS 3604 Table 10.2 + 10.4
Nogging	Pine	70 x 45 at 600mm crs max and to suit linings

(d) **Finishing Timbers**

Door frames internal	DOB Rimu	)Owner to)advise on)use of Dressed Radiata)Pine
Skirting	DOB Rimu 66mm x 12 mm fin	
Architrave	DOB Rimu 32mm x 12 mm fin	
Cornice	Pine or Plaster	
Kitchen fittings etc.	Melita or as owner advises	

Place on all external walls from floor joists to top plate breathing type Flame Shop building paper.

JOINERY (If not shown as Aluminium on Plans)

All external door frames to be grooved, throated and constructed in a proper tradesmanlike manner. Prime before fixing. Doors to be of cedar, redwood or totara, grooved all round, or aluminium.

Remaining joinery shall be aluminium awning windows to comply with NZS 4211 and aluminium window handbook. Aluminium sliding exterior doors as shown on drawings.

All aluminium windows and doors shall be supplied, powder coated to colour as advised by owner, glazed to conform with NZS 4223 2016 PART 3 PERFORMANCE OF JOINERY TO NZS 4211

DOOR SCHEDULE (As shown on Plans to 1980mm in height).

~~Kitchen cupboards etc 18mm thick to owners specification.~~

FLOOR

Before laying floor, check that top of all joists are flush and level. Lay ^{19mm EGO PLY} 20mm H.D particleboard flooring. Nail with 60mm galvanized nails on an angle and at 150mm centres maximum to edge and 300mm centres maximum to body of sheets. Punch all nails below surface.

CEILINGS

All interior ceilings shall be lined with fixed in approved manner.

WALL LININGS

Line walls unless specified otherwise with Gibraltar Board. Line walls of shower cubicle and walls above bath with Formica or other approved wet area linings.

GIBRALTAR BOARD – INTERNAL WALLS

Where scheduled, line walls with the best quality 10mm thick Gibraltar Board. Check that all framing is true to line and fix sheets using nails or screw as per Winstone Wall Boards specifications. Before stopping fix all necessary architraves, skirting trim, fittings etc. No nailing being permitted after stopping. On completion stop all joints and all nails etc ready for painting or wall paper as scheduled.

INSULATION

~~to be installed beneath floor, between joists. All exterior walls and ceiling to have fiberglass batts R2.2 and R3.2 installed respectively. Building paper to be Firestop Flame Retardant Building Paper unless specified on plans.~~

CUPBOARDS AND FITTINGS

(a) Kitchen

Form sink units, dressers and cupboards and servey to dining room where shown on the plans. Construct units with 16mm Melteca, clash all leading edges with 3 mm clashings and position drawers where directed by the owner. Cover dresser tops with selected Formica, S S sink benches to complete with upstand, or as shown on plans.

(b) Bathrooms

Form bench type vanity units with Formica or Aarkronite tops complete with Acrylic or Aarkronite bowl, cupboards under. Fix in porcelain on steel or acrylic bath to suit.

(c) Wardrobes

Frame up for wardrobes with hinged doors, 2/300mm shelves and hanging rail.

(d) Hot Water Cupboard

Construct cupboard where shown and fit with slatted shelves above and around cylinder as space allows. Provide low stand for cylinder with access to sludge valve (where concrete floor).

(e) Linen Cupboard

To have five full width slatted shelves.

(f) Laundry Tub Cabinet

To suit S S Tub.

(g) Pantry

7 Shelves, also see plan.

FIXED JOINERY

Co-operate with Joiner in the fixing of joinery items and attend upon as required.

CO-OPERATE WITH SUB-TRADERS

And do all necessary cutting away for trimming, noggin, etc as required.

ARCHITRAVE, CORNICE AND TRIM

To all interior door, window and other openings provide all architraves, cornices and trim. Mitre and scribe in accordance with good trade practice. Provide cornices to all wardrobes, coat cupboards etc.

HARDWARE PC SUM \$.....

Provide and fix good quality hardware. Type All external hinges shall be galvanized and all internal hinges shall be A C Loose pin.

Front door locksets shall be push button locking type. Laundry doors shall be the same.

Internal doors C P Latch set and furniture) Or nylon roller bolts and furniture
Bathroom and toilet C P snib-set) to owners specifications.

SECTION 7 PLUMBING

PRELIMINARY AND GENERAL

Refer to the preliminary and general clauses which also apply to this section of the work.

GENERAL

All work shall be carried out in accordance with the drawing specifications, and of the New Zealand Building Code. All materials shall be of the best of their respective kinds. Water pipes and tubes shall be set out in straight runs of even gradients, where possible avoiding all places where air locks are likely to occur. Secure copper tubing in position with copper straps. All piping including water, waste and vents shall be concealed. Provide for wet-back to fireplace if indicated on plans.

FLASHINGS

Flash as necessary to render building water-tight. All flashings shall accurately fit the work and cut in as long lengths as possible with all joints well lapped and fixed with 19mm flat head galvanized nails. Flashings required at gable ends. Also refer to Section 5: Bricklayer flashing trays. Flashings must be provided over all windows and doors.

SPROUTING AND DOWNPIPES

~~..... Fascia and gutter where shown supported with clips to manufacturer's instructions. Downpipes shall be as required by Table 5 New Zealand Building Code, galvanized iron seamed and welded and strapped off walls with 1mm galvanized iron stand-off brackets fixed with galvanized iron screws, or PVC if required.~~

VENTS

Provide terminal vent and soil pipes as required. Soil pipe shall be 80mm PVC. Fix PVC cage to top.

WASTES

All wastes to be 40mm except hand basin 32 mm galvanized trays and PVC pipes. All wastes to be discharged over gully traps. Provide and fix back vents to all wastes over 3.600 metres in length.

ELECTROLYSIS

The contractor shall ensure that no dissimilar metals are in electrolytic contact. Dissimilar metals shall be installed from each other by painting or insertion of a bituminous felt insulator to the satisfaction of the owner.

COLD WATER

Lay water from supply in 12mm copper, close cap up with all necessary bends, tees, elbow, etc lead off with 12mm copper branches ~~to sink, basin, laundry tubs, washing machine, W C, shower and two stand pipes and 12 mm branch to bath. Connect from branch to 'Ajax' valve and to hot water cylinder with 12mm copper pipe.~~

HOT WATER *Rinnai Infinity NT 24*

Provide and fix one ~~100 litre copper electric cylinder complete with 1.5kw element and thermo-stat control and all necessary connections to make the same in working order. Lay water through 19mm copper piping to bath, then with 12mm to sink, hand basin, laundry tub, washing machine and shower. All hot water pipes to be lagged. Provide anti spill tray beneath cylinder if required. Provide a temperature reducing valve at cylinder.~~

BATHROOM AND SHOWER

Provide ~~acrylic hand basin to vanity unit, 1675mm bath, shower tray as shown. Provide large type soap recesses over bath and to shower.~~

W C

Provide and fix W C earthenware pan complete with double flap white plastic seat, buffer, etc, 14 litre push button twin flush cistern, flush pipes, approved soil pipes, fittings, stop-cocks and vents. Cisterns to have silent valves and overflow. One toilet roll holder to be fixed in suitable position.

LAUNDRY

Provide and fix where shown in laundry a ~~pressed S S tub with cupboard under and large type soap recess in suitable position.~~ *SEE OF TRIPS FOR WASHING MACHINE*

TAPS

All taps and extensions except hose taps to be chrome plated, streamlined bibcocks marked "hot" and "cold".

SECTION 8

ELECTRICAL

PRELIMINARY AND GENERAL

Refer to the preliminary and general section which also applies to this section of the work.

SCOPE OF WORK

The work includes the provision and installation of all electrical work in the contract, providing meter board, fuse box and taking out and paying all fees to the electrical supply authority, all to comply with the New Zealand Electrical Codes of Practice. *AS/NZS 3000:2018 ELECTRICAL INSTALLATIONS.*

POINT OF ENTRY, METERS ETC

Apply to the power authority for the provision of the electrical supply connection to the building. From the point of entry run appropriate cable to the meter box. Neatly mount MOB's and label switches on board.

POWER POINTS

Power points shall be PDL 3 pin 10 amp. with switches in flush boxes. Provide power points where shown at heights as directed by the owner. Provide shaving outlet in bathroom above vanity unit if shown on plan. Make connections for hot water cylinder, stove, washing machine and drier.

SWITCHES

Shall be PDL in flush boxes.

CABLES

Shall be TPS of regulation size.

LIGHT FITTINGS

Allow for light points to be wired for and fixed in rooms and places as shown. Provide and fix bayonet type PDL lampholders complete with galleries.

ELECTRIC RANGE

Allow for connecting electric range and a PC sum of \$..... for range.

EXPOLAIR FAN

Provide expelair fan if shown on the plan.

SWITCH BOARD

Allow for the provision of switchboard complete as required by local authority.

INSPECTION AND TESTING

On completion of the whole installation, arrange for the installation to be tested by the local authority inspector. Remedy all faults and replace all faulty bulbs and/or damaged fittings.

COMPLETION

On completion, clean all fittings, check the correct operation of all fittings including power points and lodge any and all guarantees with the principal.

SECTION 9

DRAINAGE

PRELIMINARY AND GENERAL

Refer to the preliminary and general section which also applies to this section of the work.

DRAINAGE

The drainage will be carried out strictly in accordance with the New Zealand Building Code and the local bylaws. Provide and lay in 110mm diameter, PVC, all to have the necessary junction bends, angles, gully traps, inspections pipes, grease traps and chambers, Buchan traps, etc and all vents and fittings necessary to complete the system to the Environmental Health Officer's satisfaction. Stormwater to be carried out in materials specified by the inspector.

~~STORMWATER~~

To local authority requirements and the New Zealand Building Code.

~~SEPTIC TANK~~

Build septic tank to local authority requirements and the New Zealand Building Code.

SEWER

Connect to sewer where available as shown on plans. All to comply with the New Zealand Building Code.

SECTION 11

DECORATING

PRELIMINARY AND GENERAL

Refer to the preliminary and general clauses which also apply to this section of the work.

WORKMANSHIP

All work shall be done by skilled tradesmen. Protect all work from weather, dust, etc and provide protection for other work against all paint drops, stains and other defects. No paint is to be applied to damp surfaces and no external surfaces are to be painted during frosty or unsuitable weather. Between each coat, rough patches etc shall be rubbed down with glass paper to obtain a good surface. Any work damaged by dust, rain or any other cause shall be rubbed down and recoated. Paint shall impinge upon glass for weather protection.

EXTERIOR WORK

Timber: Stain

All timber to be stained to receive two full coats of an oil base stain. All laps etc to be stained before fixing of timber.

Timber: Paint

Prime and stop. Apply two full coats of gloss acrylic, or one coat of undercoat and one coat of enamel.

Hardieflex Products

Clean any dusty surfaces and apply two full coats of a gloss acrylic.

Galvanised Steel

Apply one coat of galvanized primer followed by two coats of acrylic.

INTERIOR WORK

Varnish work to receive three full coats of polyurathane Satin, or two coats of polyurathane Satin and one coat of polyurathane Gloss.

Timber: Painted

Apply two full coats of interior primer-undercoat, stopping nail holes etc after first coat, followed by one coat of the highest quality enamel, tints and gloss to the approval of the owners.

Ceilings: Plasterglass or Gib-board

Lightly sand and brush down. Apply one coat of Sealer, one undercoat and one coat of Satin. Lightly sand and brush down between coats.

~~PAPERHANGING~~

~~Allow for paperhanging all rooms of a new dwelling, or any areas affected by alterations etc. All surfaces to be papered are to be perfectly smooth and prepared with size. Allow for cutting in all angles and hanging with butt joints and with patterns truly matched and plumb. All papers to be selected by owner. Allow the PC sum of dollars per roll for paper. Paste to contain a fungicide. Kitchen, WC, Bathroom and Laundry to be vinyl paper at a PC sum of per roll.~~

Rinnai

*Behind the magic
of hot water*

GAS & ELECTRIC HOT WATER HEATING COLLECTION

Rinnai INFINITY®

Outdoor Continuous Flow Gas Water Heater

One of the sharpest tools in the shed, the Rinnai INFINITY® outdoor continuous flow gas water heater is clever, contemporary and a cinch to operate. Enjoy a system that heats your water when you need it – and the peace of mind that the hot water won't run out! The Rinnai INFINITY® gas water heater is a nifty little system – able to be installed outside so you won't have to sacrifice any of your indoor living space.

Key benefits and features:

- Cost Efficient: Only pay to heat the water you use. Low running costs compared to electric storage cylinders
- Efficient Design: Multiple units can be manifolded together to make larger systems and extra hot water capacity
- Space Saving: Located outside to give you more space indoors
- Clever Design: These systems modulate to heat water at lower flow rates
- Adaptive: Supports lower flow rates required of new tap and bathroomware

Rinnai INFINITY® VT:

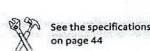
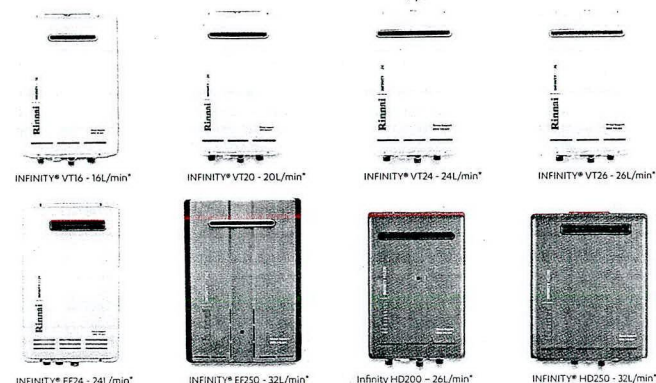
- Designed for homes requiring endless hot water with lower initial set up cost.
- Up to 80% thermal efficiency

Rinnai INFINITY® HD:

- Designed for domestic or commercial users who need higher flow rates or have larger water use requirements
- Up to 80% thermal efficiency

Rinnai INFINITY® EF:

- Ideal for the environmentally conscious who want to significantly reduce running costs and lower energy usage, while still having the luxury of endless hot water
- Up to 95% thermal efficiency



*The L/min is the nominal water capacity at a 25°C rise. **EF Models: Save up to 66% of running costs with Natural Gas or up to 28% with LPG compared to an electric storage cylinder. ***HD Models: Save up to 61% of the running costs with Natural Gas or up to 17% with LPG compared to an electric storage cylinder. ****VT Models: Save up to 60% of the running costs with Natural Gas and 15% with LPG compared to an electric storage cylinder. *10 year warranty pro rata on heat exchanger. **3 year warranty on parts and labour. Please refer to Limited Warranty statement on Rinnai Continuous Flow Water Heaters at <http://www.rinnai.co.nz/warranty.html>

Technical information

Gas Water Heating Specifications

Gas Continuous Flow – Indoor and Outdoor Rinnai INFINITY® Range

RINNAI INFINITY® MODEL		VT16	VT20	VT24	VT26	HD200	HD200	HD250	EF24	EF250	EF250
Part Number	LPG NG	INFVT16L INFVT16N	INFVT20L INFVT20N	INFVT24L INFVT24N	INFVT26L INFVT26N	INFHD200HNCN INFHD200HNCN	INFHD200FFHNCN INFHD200FFHNCN	INFHD250HNCN INFHD250HNCN	EF24NCL EF24NCL	INFEF250L INFEF250N	INFEF250FL INFEF250FN
Suitable for Mounting		1bth External	2bth External	2bth+ External	2bth+ External	2bth+ External	2bth+ Internal	2bth+ External	2bth External	2bth+ External	2bth+ Internal
Hot water capacity	L/min	1.5 - 16	1.8 - 20	1.8 - 24	1.8 - 26	2.4 - 30	2.4 - 32	2.4 - 37	2.4 - 30	1.5 - 37	1.5 - 37
Nominal water capacity**	L/min	16	20	24	26	26	26	32	24	32	32
Height	mm	530	530	530	530	600	600	600	600	654	654
Width	mm	350	350	350	350	350	350	470	350	470	470
Depth	mm	194	194	194	194	250	235-275	244	277	283.1	257-307
Thermal	%	81	80	80	80	82	83	81	95	95	95
Weight	kg	15	16	17	17	21	21	29	27	32	32

Note: 65°C and 75°C are available as preset temperature settings for commercial applications. * For hard water area's, ask us about the benefits of a Heavy Duty model. ** Raised 25°C

Digital Controllers

CONTROLLER	CODE	HEIGHT (mm)	WIDTH (mm)	DEPTH (mm)
Compact	MC912A	120	90	20
Bathroom Deluxe	BC100VIZ	97	195	22
Kitchen Deluxe	MC100VIZ	120	128	20
Wireless Remote*	MCS03S	142	66.6	28

*Needs Transceiver MCS03M

Outdoor Accessories

MODEL	CODE	SUITABLE FOR	HEIGHT (mm)	WIDTH (mm)	DEPTH (mm)
RECESS BOX					
Composite Recess Box	R1406	All VT Products	1086	446	240 (approx with cover)
Metal Recess Box	R1405	All VT Products	944	417	205
Metal Recess Box	R1407	HD200, HD250, EF24	944	514	270
FLUE DIVERTERS					
Upwards Flue Diverter	FDU16	VT16	-	-	-
Upwards Flue Diverter	FDU20	VT20	-	-	-
Upwards Flue Diverter	FDU24	VT24, VT26	-	-	-
Upwards Flue Diverter	FDU32	HD250	-	-	-
Sideways Flue Diverter	FDS16	VT16	385	140	60
Sideways Flue Diverter	FDS20	VT20	385	140	60
Sideways Flue Diverter	FDS24	VT24, VT26	385	140	60
PIPE COVERS					
Pipe Cover	R1385	All VT Products	438	334	167
Pipe Cover	R1408SC	HD200	448	334	230
Pipe Cover	R1402SC	HD250	438	453	230
Pipe Cover	R1408	EF24	448	334	230
Pipe Cover	R1409	EF250	470	460	240
SECURITY BRACKET					
Security Bracket	ACC1395	All INFINITY® Products	70	190	33.5

iHeat® Central Heating System Dimensions and Clearances

UNIT	MODEL	Appliance				Minimum Clearance Above Unit (mm)	Minimum Clearance Each Side of Unit (mm)	Minimum Clearance Front & Behind Unit (mm)
		Height (mm)	Width (mm)	Length (mm)	Weight (kg)			
iHeat® Ceiling Installation	RAHU20	600	790	1135	50	450	750	1000
iHeat® Subfloor Installation	RAHU20	910	790	1135	50	450	750	1000

iHeat® Central Heating System Additional Features

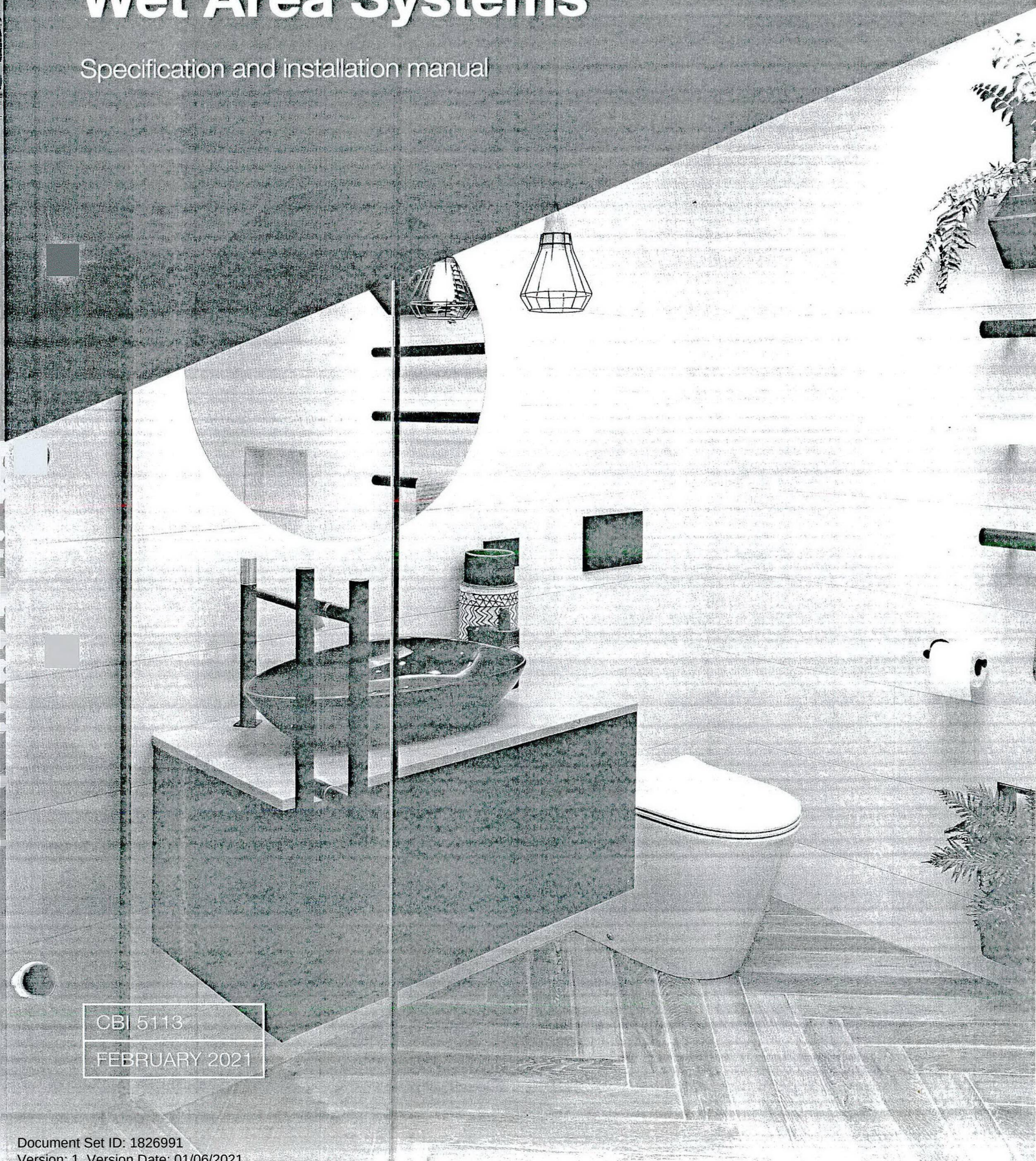
UNIT	MODEL	DUCTED	Recommended Number of Outlets	Zone Heat Area m² (up to)			Sensitive Choice	NATURAL GAS	LPG	kW HEAT OUTPUT		Thermostat Controlled	Speed Fan	Manual Control	Air Filter	Zoning
				Upper North Island	Central & Lower North Island	South Island				Max. Output (kW)	Low. Output (kW)					
iHEAT®	RAHU20	✓	6-12	333*	285*	250*	✓	✓	✓	20	6	✓	3	✓	✓	✓

* Each house will vary in zone heat area due to the amount of insulation, number and size of windows, floor structure etc



Wet Area Systems

Specification and installation manual



CBI 5113

FEBRUARY 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



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 pre-seal 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.

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

Compliance with the NZ Building Code

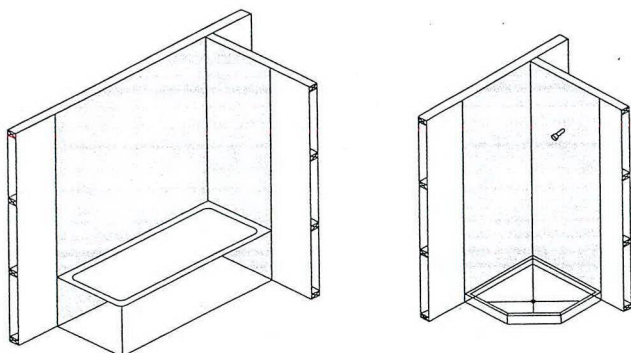
STRUCTURE – CLAUSE B1

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

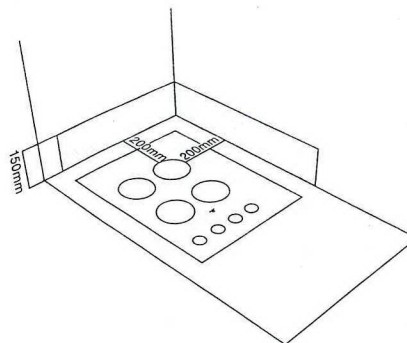
When installed and maintained in accordance with this literature, GIB® Wet Area systems tiled or vinyl covered have a serviceable life of at least 15 years. They comply with the requirements of NZ Building Code Clause B2 (Durability) for use in wet areas directly exposed to liquid water, e.g. showers,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

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.

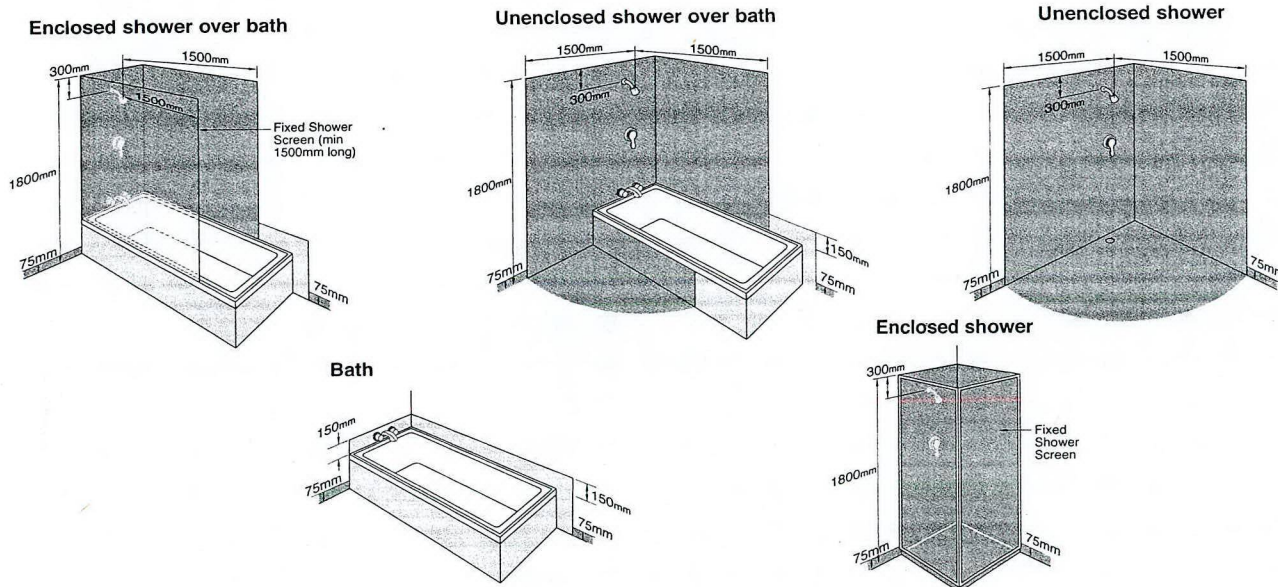
E3.3.5 - Surfaces of the building elements likely to be splashed or become contaminated in the course of the intended use of the building, must be impervious and easily cleaned.

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.





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 Fyrelite®, 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.

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.

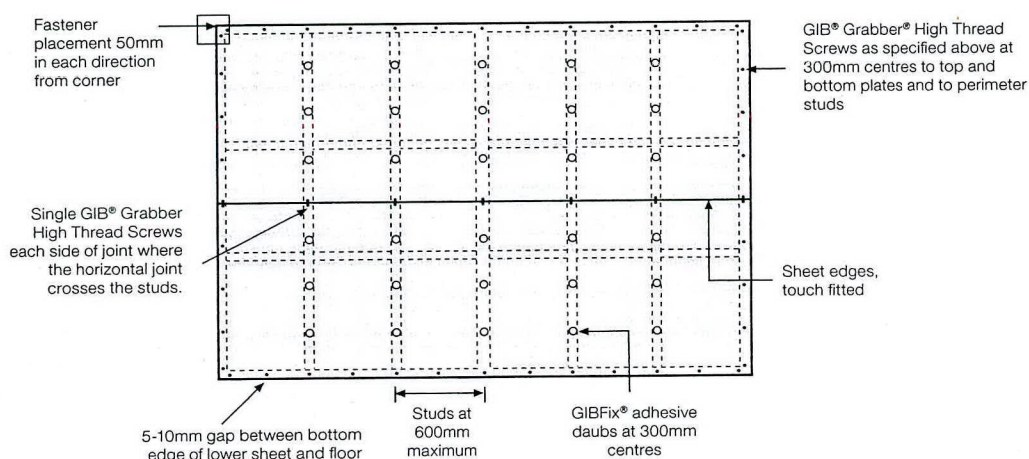
LINING

- 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.

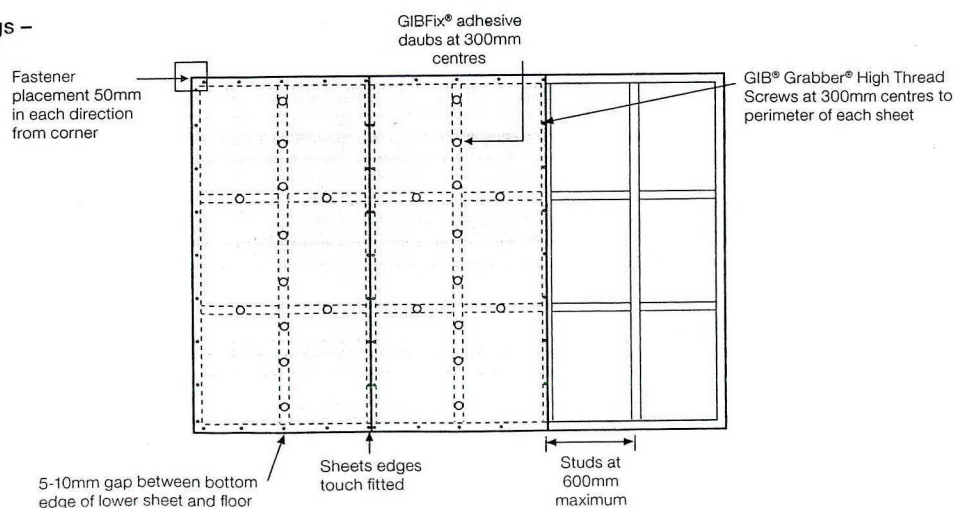
JOINTING

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

Fastening the Linings – Horizontal Fixing Only

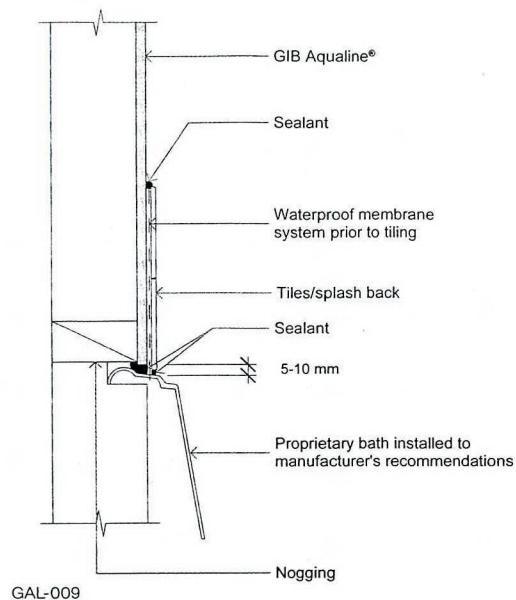


Fastening the Linings – Vertical Fixing Only



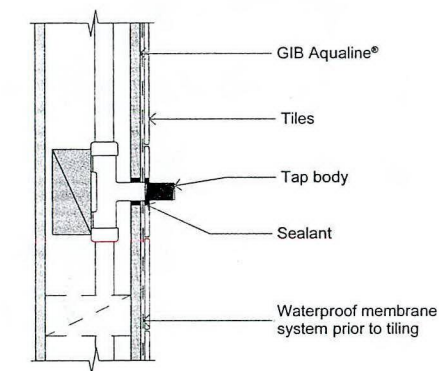


A: BATH LINING JUNCTION



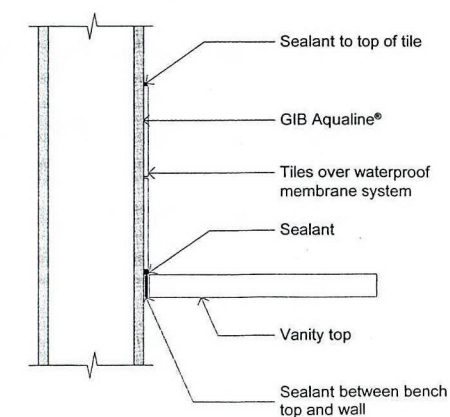
GAL-009

B: SEALING SEMI WET AREA PENETRATION



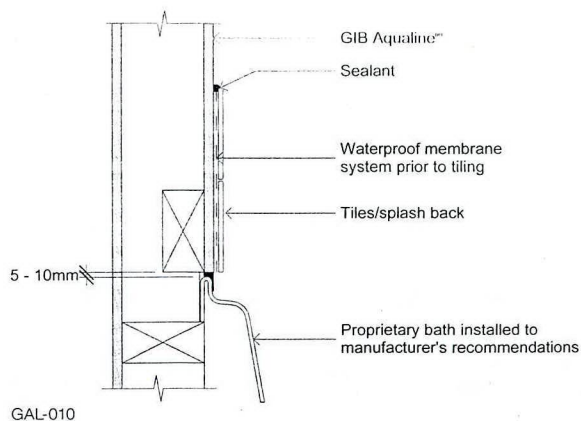
GAL-020

C: VANITY TOP LINING JUNCTION



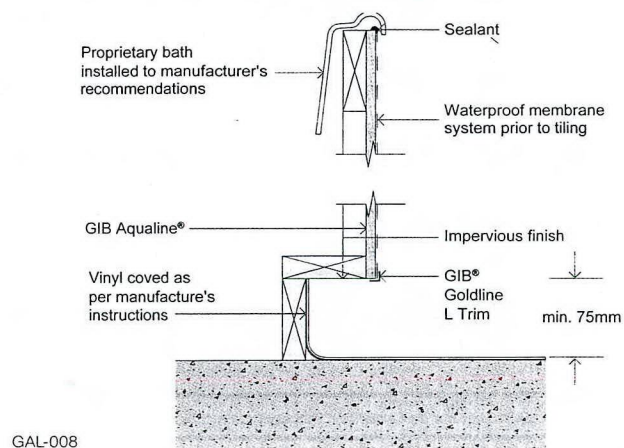
GAL-024

D: BATH LINING JUNCTION

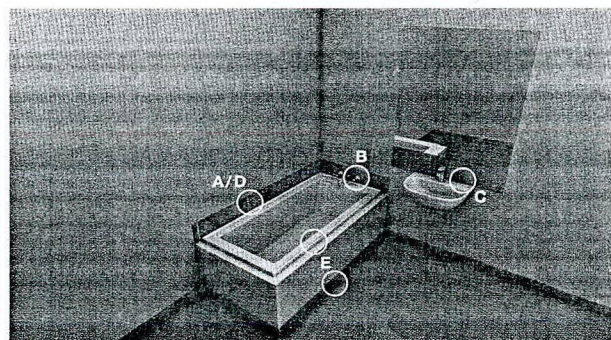


GAL-010

E: CRADLE VINYL LINING JUNCTION

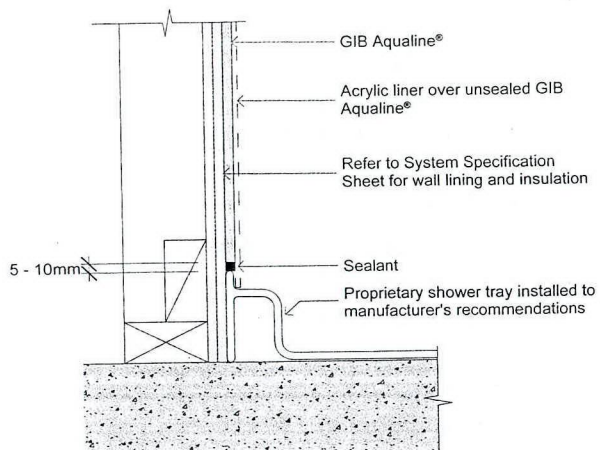


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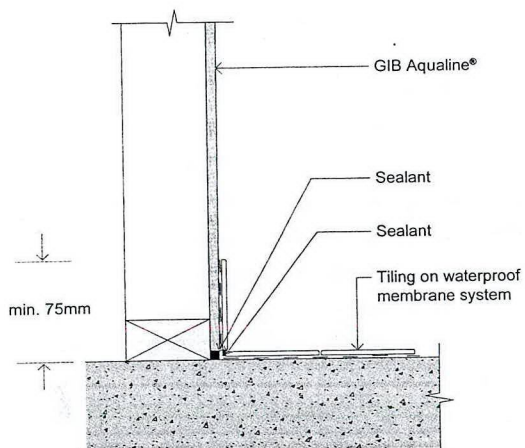


A: MOULDED SHOWER TRAY DOUBLE LINING JUNCTION



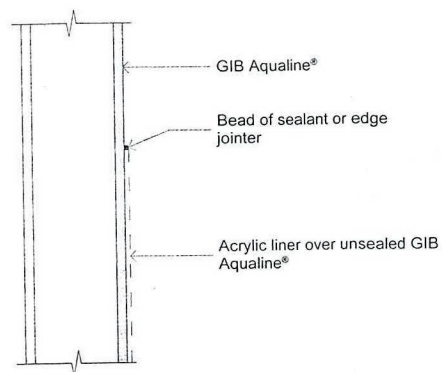
GAL-015

B: CERAMIC FLOOR SKIRTING LINING JUNCTION



GAL-001

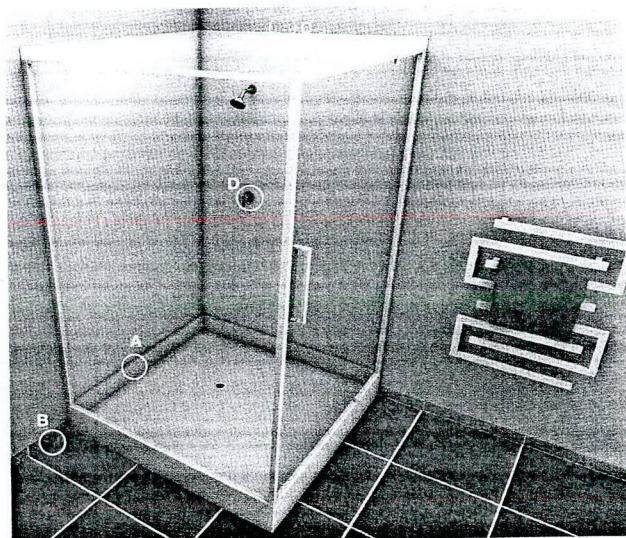
C: UNSEALED PLASTERBOARD LINING



GAL-028

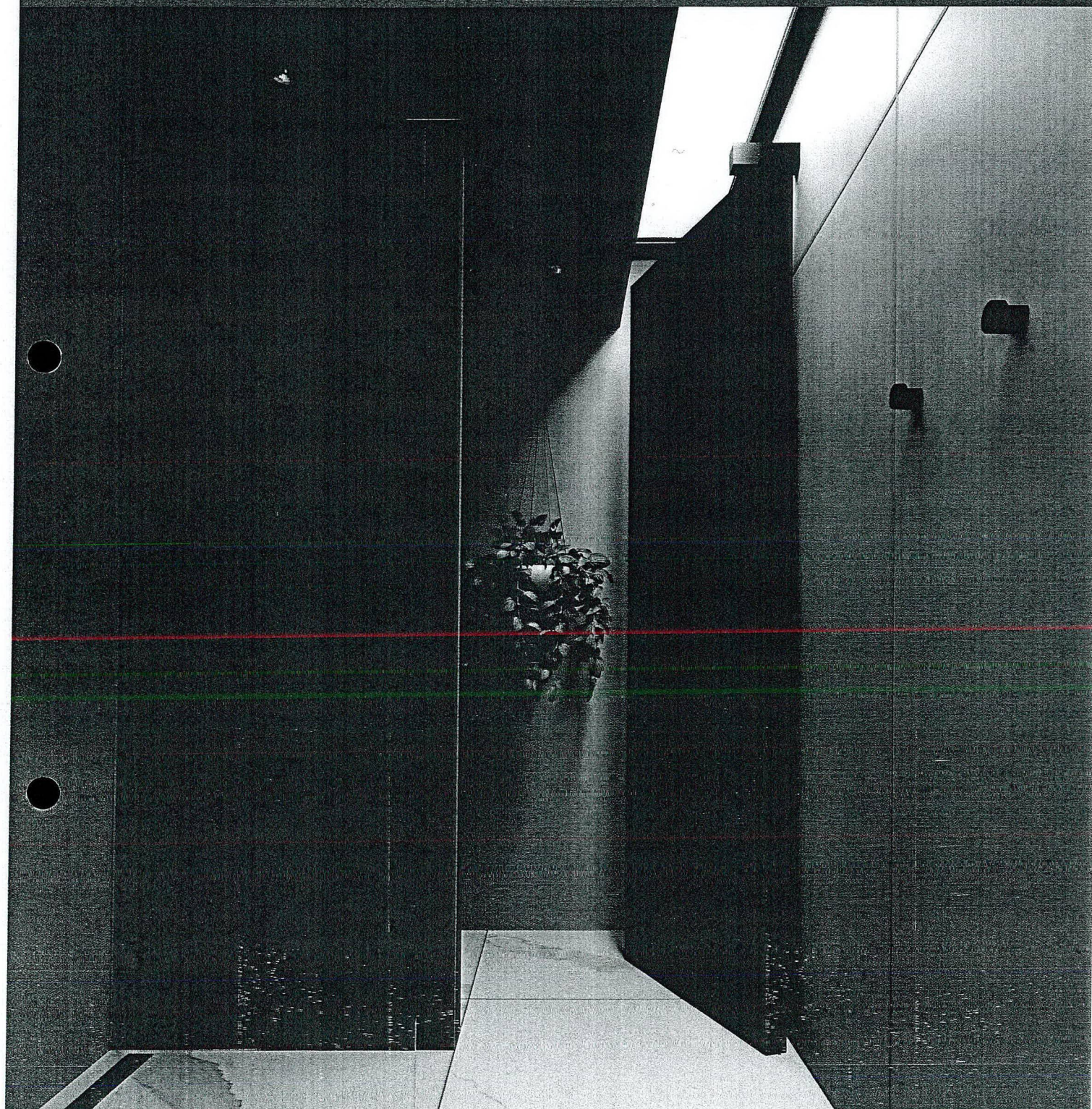
D: SHOWER MIXER PENETRATION IN WET WALL LININGS

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.



seratone®

Technical Installation Manual



SERATONE®
AQUA

SERATONE®
CLASSIC

SERATONE®
SPECIALTY

SERATONE®
SPACE

SERATONE®
JOINTERS

Laminex™
NEW ZEALAND

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1 Scope and Interpretation

1.1 Identification

Seratone® solutions consist of a range of pre-finished panels and jointing options.

Seratone® Aqua is a compact panel suitable for interior wet and dry applications like bathroom and shower recess panelling, kitchen splashbacks and laundry walls. Seratone® Aqua is a water resistant surface that is safe in all areas directly exposed to steam or moisture. Please refer to limitations after moisture.

Seratone® Classic and Specialty panels are pre-finished wall and ceiling panels manufactured on a lightweight, high density fibreboard. There are two separate Seratone® palettes, specifically designed to complement other contemporary materials such as timber, wood veneer, laminates, glass, granite, steel and paint, as well as each other.

Seratone® Aqua is a compact panel constructed with layers of kraft paper, dipped in resin and dried. These layers are then sandwiched between laminated top and bottom sheets, compressed and baked. A process called polymerisation melds them altogether creating a solid-core panel that is an extra tough durable laminate.

Seratone® Classic utilises a 140 micron multi-layered paint system which is fully cured using UV light. The paint contains no volatile organic compounds (VOC's) and is available in a choice of gloss or satin finish.

Seratone® Specialty utilises a 220 micron multi-layered paint system which is fully cured using UV light. The paint used contains no volatile organic compounds (VOC's) and these ultra-glossy panels have superior chemical and scratch resistance when compared to similar paint systems. Seratone® Specialty panels are available in a range of fashionable colours in gloss finish.

Seratone® Space is a painted pegboard ideal for retail spaces, kitchens and storage and is suitable for dry areas only. Colour matched jointers are available as well as single and double peg options.

Seratone® panels have a smooth glass like finish, providing a tough, durable, non-porous surface that easily resists marks, stains, steam or moisture. Panels are easy to clean, impervious to moisture and will not support mould growth. These panels can be used in dry, wet or hygiene area applications.

There are a range of colour matched aluminium jointing options to complement all the panel colours. White and clear silicone sealants are also available from building supply merchants.

1.2 Compliance

1.2.1 Seratone® Aqua

HPL / Compact laminate is an acceptable solution in E3/AS1 3.1.2, clause g, for a wet area wall lining panel. (g) "Water resistant sheet linings finished with decorative high pressure laminate or factory applied polyurethane". When stored, handled, installed and maintained in accordance with the Seratone® Aqua technical information that is current at the time of installation, Seratone® Aqua will meet the durability requirements of the New Zealand Building Code (NZBC) B2/AS1 and has a serviceable life of at least 15 years in wet areas and 5 years in all other internal applications.

1.2.2 Seratone® Classic and Specialty

When stored, handled, installed and maintained in accordance with this document, Seratone® will meet the durability requirements of the New Zealand Building Code (NZBC) B2/AS1 and has a serviceable life of at least 15 years.

Laminex New Zealand™ will not be liable to any persons if the conditions as to storage, handling, installation and maintenance of Seratone® as outlined within this document are not complied with. It is the obligation of the installer of the Seratone® to convey this information to the relevant owner/occupant.



BRANZ Appraised
Appraisal No.790 [2019]

The BRANZ Appraisals cover the use of both Seratone® Classic and Specialty product options within the scope of the New Zealand Building Code.

The valid appraisal certificates can be found on the BRANZ website – www.branz.co.nz

1.3 Make sure your information is up to date

When specifying or installing Laminex New Zealand™ product, ensure you have the current technical manual. If you are not sure you do, or you need more information, visit laminex.co.nz or call Laminex New Zealand™ on 0800 303 606.

2 General Product Description

2.1 Seratone® Aqua uses

- o Bathroom, laundry, shower wall and ceiling linings
- o Wall and ceiling linings in commercial, industrial and agricultural hygiene areas, and heavy wash down areas
- o Splashbacks
- o Wall and ceiling linings where health regulations require the use of water and chemical resistant lining materials for cleaning and maintenance of surfaces

2.2 All Seratone® panels uses

- o Wall and ceiling linings in commercial, industrial and agricultural hygiene areas
- o Bathroom, laundry, shower wall and ceiling linings
- o Pre-finished decorative wall or ceiling linings
- o Splashbacks
- o Retail fitouts
- o Sliding cupboard and wardrobe doors
- o Flush door facings
- o Cabinetry facings
- o Furniture
- o Feature panels
- o Display areas
- o For refurbishment work over existing linings
- o Service and food processing areas in hotels, motels and fast food outlets
- o Partitioning
- o Signage

2.3 Seratone® panels range

Seratone® is available as below in below various panel options with colour matched or powder coated aluminium jointers 2700mm in length.

Table 2.1

Seratone® panels range			
Sheet sizes	24x9	24x12	27x12
Seratone® Aqua 2.7mm	O Polar White Gloss and Polar white square tile only		
Seratone® Aqua 4.5mm		O	O Polar White Gloss only
Seratone® Classic	O Polar only	O	O Polar only
Seratone® Specialty			O
Seratone® Space	O Polar only	O	O



3 Material Properties

3.1 Seratone® Aqua 2.7mm product details

Table 3.1 Sheet details

Sheet details			
Nominal sheet size (mm)	Nominal thickness (mm)	Mean weight (kg/m ²)	Mean weight (per panel kg)
2400 x 1200	2.7	4.4	8.5

Table 3.2 Sheet tolerances

Sheet tolerances	
Length and width (mm)	-0/+3
Squareness	The difference between the measured diagonals is no greater than 1.5mm - mm/m
Thickness (mm)	+/-0.1

3.2 Seratone® Aqua 4.5mm product details

Table 3.3 Sheet details

Sheet details			
Sheet sizes (mm)	Nominal thickness (mm)	Mean weight (kg/m ²)	Sheet weight per panel (kg)
2400 x 1200	4.5	6.64	20
2700 x 1200 ⁺	4.5	6.64	21.5

⁺Polar White only

Table 3.4 Sheet tolerances

Sheet tolerances	
Length and width (mm)	+/-2mm
Squareness	The difference between the measured diagonals is no greater than 1.5mm - mm/m
Thickness (mm)	4.36mm - 4.5mm

Table 3.5 Seratone® Aqua details

Seratone® Aqua details			
Property	Unit	Measure	Standard
Application			VGS (Vertical General Purpose Standard)
Weight	kg/m2	4.4 - 4.7 kgs/m2	
Resistance to surface wear		Initial wear not less than 50 cycles. Average wear not less than 150 cycles*	AS/NZ 2924.1 1998
Resistance to immersion in boiling water		No deterioration other than slight loss of gloss. Gain in weight of not more than 5%	AS/NZ 2924.1 1998
Resistance to dry heat at 180°C		No deterioration other than slight loss of gloss and/or colour	AS/NZ 2924.1 1998
Resistance to steam		No deterioration other than slight change of gloss and/or colour	AS/NZ 2924.1 1998
Dimensional stability		Dimensional change of not more than 0.3% with grain and 0.65% across grain	AS/NZ 2924.1 1998
Resistance to staining		Reagents groups 1 & 2 = no visible change Reagents groups 3 & 4 = slight change of colour and/or gloss	AS/NZ 2924.1 1998
Resistance to colour change in artificial light*		Not more than slight colour change in Xenon arc light (min. 6 on Blue Wool Scale)	AS/NZ 2924.1 1998
Resistance to cigarette burns		No deterioration other than moderate change in gloss and moderate brown staining	AS/NZ 2924.1 1998

* Not applicable to Ripple – low duty wear use only, average wear point of 10 cycles.

* Seratone® Aqua has good colour retention in normal interior applications, however prolonged exposure to sunlight may cause some change in colour. Seratone® Aqua is therefore not recommended for exposed external applications and any prolonged exposure to direct sunlight should be avoided.

3.3 Seratone® Classic, Specialty and Space product details

Table 3.6 Sheet details

Sheet details			
Sheet sizes (mm)	Nominal thickness (mm)	Mean weight (kg/m ²)	Mean weight per panel (kg)
2400 x 900*	4.5	4.7	10.2
2400 x 1200*	4.5	4.7	13.5
2700 x 1200*	4.5	4.7	15.2

*Polar only *Specialty range and Polar only *2400x1200 is Classic range only

Table 3.7 Sheet tolerances

Sheet tolerances	
Length and width (mm)	± 2.0
Squareness	The difference between the measured diagonals is no greater than 3.0mm
Thickness (mm)	± 0.5mm from the nominal

Table 3.8 Substrate properties

Substrate properties		
Property	Performance figures	Units
Density	1050	kg/m ³
Internal Bond	2.0	MPa
Modulus of rupture (Av.)	50	MPa
Modulus of elasticity (Av.)	5500	MPa
Impact Resistance*	>1.0	J
Curved Shapes minimum radius	1000	mm

*Drop test with striker ball $\phi=12.7\text{mm}$



4 Durability

4.1 Limitations

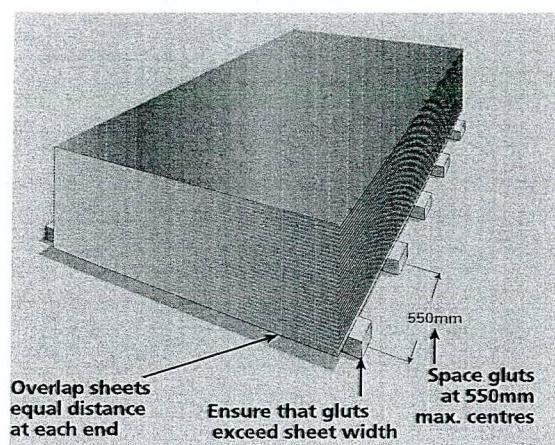
- o Seratone® panels must not be subjected to submersion or continuous permanent contact with water. Continuous intermittent contact is ok for Seratone® Aqua. Do not use in saunas or steam rooms
- o Some slight fading may be experienced over the course of time when exposed to direct sunlight
- o Seratone® is only suitable for use between -20°C and up to a maximum of 50°C for medium or long term exposure. For short term exposure maximum temperature should not exceed ambient temperature plus 65°C
- o Seratone® is not intended for use as a wall bracing panel
- o Use of Seratone® as whiteboards may leave ghosting from some inks, and is therefore not recommended
- o Seratone® panels are not intended for use in exposed exterior locations

4.2 Handling and storage

Seratone® Panels must be stored in dry conditions and handled in accordance with this document.

- o Keep sheets flat by stacking on evenly spaced bearers (gluts) which extend across the full sheet width (refer to Figure 1)
- o When stacking high, line gluts vertically one above the other
- o Care of the sheet face is essential to protect the decorative surface
- o To avoid damage to the surface, lift rather than drag the sheets off the stack
- o Leave protective film on panels intact, until ready for use (see page 14, 6.4.6)

Figure 1. Storing Seratone® panels



4.3 Cleaning

Recommended cleaning products: Jif Powerspray®, Sunlight liquid®, Ajax spray 'n' wipe® – multi purpose, kitchen antibacterial, bathroom antibacterial, Handy Andy®, Shower Witch, domestic strength diluted bleach.

- o Adhere to cleaner manufacturer's instructions
- o A soft cloth is recommended
- o Do not use scouring pads or abrasive cloths (e.g. steel wool) or cream cleaners as these may damage the surface
- o The removal of dust from the surface can be easily achieved by the use of an electrostatic dusting cloth (e.g. Johnson's Pledge Grab-it)

4.4 Durability conditions

- o Seratone® will meet the durability requirements of the New Zealand Building Code (NZBC) B2/AS1 and has a serviceable life of at least 15 years in wet areas.
- o Seratone® will meet the durability requirements of the New Zealand Building Code (NZBC) B2/AS1 and has a serviceable life of at least 5 years in all other internal applications (excluding Seratone® Space).
- o Laminex New Zealand® will not be liable to any person if the conditions as to storage, handling, installation and maintenance of Seratone® panels as outlined within this document are not complied with. It is the obligation of the installer of the Seratone® panels to convey this information to the relevant owner/occupant.

4.5 Moisture content

- o The dimensions of Seratone® panels can be affected by changes in relative humidity. Therefore, conditioning in the environment in which the sheet will be installed is required. This is best achieved by flat stacking sheets with fillets between and leaving for a minimum of 48 hours prior to installation.
- o In some cases, it may be prudent to extend the conditioning time. e.g. where damp site conditions prevail or where large continuous runs of lining will be installed (over 6 lineal metres).

4.6 Permeability

- o Seratone® Classic and Specialty panels are resistant to moisture penetration through the coated front of the panel. Permeability: Less than 0.14g/day/m² /mmHg.
- o Seratone® Aqua is resistant to moisture penetration and is totally impermeable.

4.7 Effects of heat

- o Seratone® panels are combustible and therefore must be separated from chimneys, fireplaces, heaters, flues and fuel burning appliances. Part 7 of NZBC Acceptable Solutions C/AS1 – C/AS6 and NZBC Verification Method C/VM1 provide methods for separation and protection of combustible material from heat sources.

4.8 Fire properties

- o The Group Number Classifications are generated from tests carried out and data produced in accordance with the test procedure described in ISO 5660 2002 – Reaction to Fire test – Part 1: Heat Release and Part 2: Smoke Production Rate, and ISO 9705 Reaction to Fire test: Part 1. for the purposes of determination of the Group Classification in accordance with the New Zealand Building Code Verification Method C/VM2. Appendix A (refer table 4.1).

Table 4.1 Fire Properties

Product	Group Classification	Test Method
Seratone® Aqua 2.7mm	3	ISO 5660
Seratone® Aqua 4.5mm	3	ISO 9705
Seratone® Classic	3	ISO 5660
Seratone® Specialty	3	ISO 5660

Seratone® sheets are combustible, and they must be separated from chimneys, fireplaces, heaters, flues and fuel burning appliances in accordance with the requirements of NZBC Acceptable Solution C/AS1 Part 9.

5 Design Considerations

5.1 Design considerations:

5.1.1 Choosing colours:

Dark, high gloss colours are more likely to highlight finger marking and wear and tear therefore careful consideration should be taken when selecting these colours for harshly lit or high use areas.

Due to the gloss finishes available for Seratone® panels, care should be taken in choosing colours suitable for the lighting situation. Lighter colours are more tolerant of harsh lighting environments.

5.1.2 Curves and shapes:

Seratone® Classic and Seratone® Specialty are easy to work with and can be curved to a maximum radius of one metre. It can be CNC or laser cut, making it ideal for feature panels, corporate identification or signage.

Seratone® Aqua is a compact laminate and is non-postformable, curving is not recommended.

5.1.3 Tile alignment:

To ensure perfect tile pattern alignment for Herringbone, Subway and Square Tiles, cutting of sheets will be required when continuous runs of sheets are installed. It is recommended this is allowed for when planning the installation of the sheets.

5.2 Seratone® in aluminium frames

Seratone® can be easily cut and shaped for use in sliding and conventional opening aluminium door systems. They can also be used in aluminium frames for office partitioning and furniture.

5.3 Frameless panels

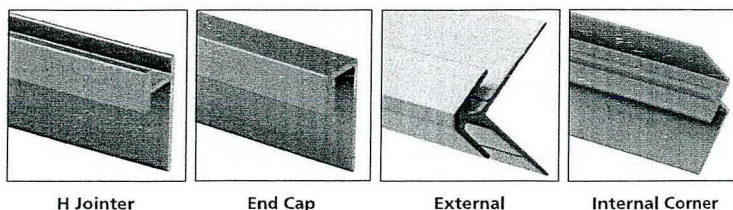
You can create the thickness you require for standard concealed hinges or where a thicker or double-sided panel is required. Seratone® can be laminated to panel products such as MDF, using normal woodworking glues. Edges can be finished using contrasting edge-banding, timber clashing or the edges can be painted.

5.4 Seratone® accessories

Seratone® fixing system profiles have been developed by Laminex New Zealand® to stylishly integrate joints and minimise areas where mould and grime could gather in both wet and dry area applications. Joints come in 2700mm lengths.

Seratone® aluminium jointers and PVC mouldings can be cut with a fine toothed tungsten tipped drop saw, or a fine toothed hack saw. Ensure all cutting blades are sharp prior to use.

Figure 2. Seratone® Jointers available in 2.7mm and 4.5mm thickness



6 Installation

6.1 Planning and installation

Seratone® sheets are relatively simple to install using construction adhesive and if desired double-sided tape. It can be fixed directly to a timber frame wall or it can be laid over a range of substrates, such as plasterboard, Strandboard®, MDF and Fiber cement. When planning an installation, it is important to select the most appropriate jointing and fixing method to achieve the desired result.

6.2 Splashback installation

Seratone® can be used as a splashback (excluding Seratone® Space, which can be applied directly onto framework, or existing linings). Prior to installation of sheets into kitchens, refer to design considerations section. Due to heat and cleaning requirements where Seratone® is being used as a splashback, it is recommended that 'full sheets' are used wherever possible (avoid joins).

The following distances must be adhered to:

ELECTRIC COOKTOP: Seratone® panels (excluding Seratone® space) can be used as a splashback material behind an electric cooktop provided it is kept at a distance of at least 100mm from the periphery of the nearest heating element.

GAS COOKTOP: Seratone® panels (excluding Seratone® Space) can be used as a splashback material behind a gas cooktop provided it is kept at a distance of at least 200mm from the periphery of the nearest gas trivet.

Figure 3.

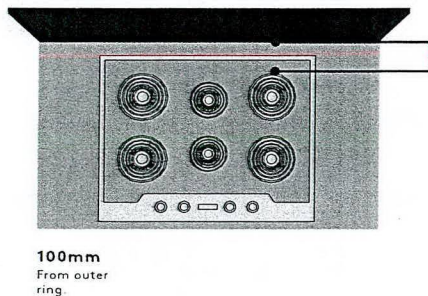
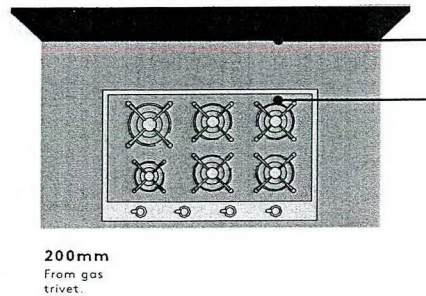


Figure 4.

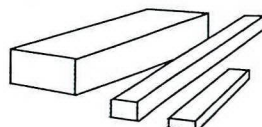
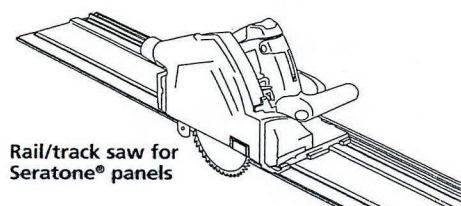




6.3 Getting started

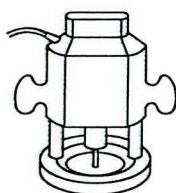
Tools and accessories (products not supplied by Laminex New Zealand™)

Figure 5 . Source appropriate tools and accessories



Timber required

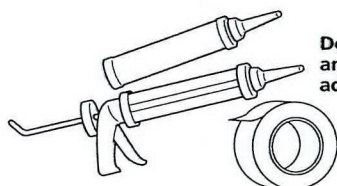
- Timber for nogging
- 6mm thick temporary packing
- Temporary battening (if Silicone Jointing is to be used)



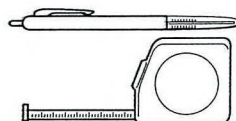
For cutting, a router/ laminate cutter, table saw, circular saw or fine toothed panel saw



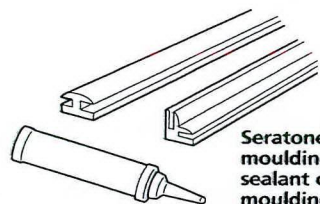
Drill, hammer and chisel for cut-outs and penetrations



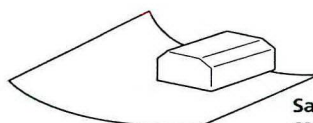
Double sided tape and construction adhesive for fixing



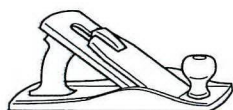
Ballpoint pen and measuring tape for marking cutouts on plastic film



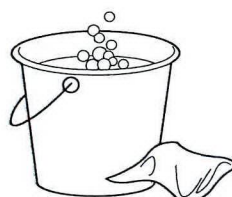
Seratone® aluminium mouldings, silicone sealant or PVC mouldings for jointing



Sandpaper and cork block for radius edges



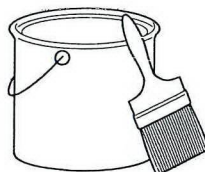
Plane or router/ laminate cutter for straightening and smoothing out edges



Clean cloth and soapy water for clean up



Turpentine for removing solvent based adhesive



For best results, a two component epoxy sealer, such as Everdure or similar

Table 6.1 Recommend adhesives

Application / use	Product name / description
Sealant	Sika 123 MS Sealant*
	Sika NG Artic White
	Sika Sikasil NG Translucent
	Fuller Sanitary 770
	Gorilla MS Sealant
	Gorilla 240FC MS*
	Gorilla Kitchen & Bathroom Sealant
	Silaseal Forever white
Adhesive	
	Sika Nail Bond Fast
	Sika Nail Bond Premium
	Sika Showerbond
	Sika 123 MS Sealant*
	HB Fuller Maxbond
	Gorilla MS Sealant*
	Gorilla 240FC MS*
	Holdfast liquid bond shower grab
	Holdfast SB Power Adhesive
	Holdfast Nailpower Construction adhesive
Double sided foam tape	Gator Double Sided Foam Tape 12mm x 2mm x 30mtr
	Danco 6620
*For use on non-porous substrates	

Important note - Adhesives:

The recommended adhesives listed will adhere to timber and steel framing, clean plasterboard, Strandboard® and MDF surfaces. For any alternative linings or surfaces including applied finishes an adhesion test is recommended before full application.

Some solvent based adhesives can distort the painted face of the panel, Laminex New Zealand™ do not recommend the use of high solvent adhesives.

Non-porous substrates:

When bonding Seratone® Classic, Specialty and Space to non-porous substrates: such as existing Seratone®, vitreous tiles and glass, high solvent and water-based adhesives can distort the painted face of the panel, Laminex New Zealand™ recommend the use of MS polymer adhesives such as Sika MS 123 or Soudal Gorilla 240FC for bonding to non-porous surfaces.

Always refer to the adhesive manufacture's technical data sheets for further information on curing times and possible surface preparation requirements.

6.4 Planning

In planning, remember not all wall/ceiling/floor intersections are square. It is usually advisable to begin in the centre of the wall or ceiling with a full Seratone® panels sheet.

- o Plan for part sheets to be placed at the corners of the room
- o Ensure sheet joints (and jointers where appropriate) coincide with the centre of studs or supports when installing directly to timber framing
- o Complete plan for joint sequence layout

Note:

1. Sheets are usually installed vertically on walls, they can also be fixed with long edge laid horizontally for contrast or to create a feature in a dry area. If sheets are to be laid horizontally, ensure continuous support is provided behind all joints. Ensure all sheets are installed in the same direction.

2. Laminex New Zealand™ do not recommend installing sheets in a horizontal orientation in shower enclosures or wet area rooms. If the sheet is to be installed horizontally (along the wall) in wet areas where water runs over the sheet face, silicone must be used to form the join between the two sheets (do not use an aluminium jointer).

6.4.1 Timber framing

- o Ensure the timber support (nog/dwang/batten/stud) faces are straight, in alignment and flush.
- o Studs and nogs need to be at 600mm maximum centres for 1200mm wide sheets and 450mm for 900 wide sheets. For ceilings, suitable sized battens should be spaced at 400mm maximum centres.
- o Ensure all support surfaces to be bonded are clean and dry (maximum moisture content: 18%).

6.4.2 Lined wall and ceilings

- o Walls and ceilings lined with plasterboard, or similar are suitable for direct fixing providing the surface is flat, sound and properly fixed.

6.4.3 Concrete and masonry walls and all ceilings

- o Do not fix directly to concrete and masonry walls.
- o Ensure concrete/masonry wall is dry and will continue to remain so. Application of a waterproof membrane may be required to prevent ongoing moisture issues. Do not fix directly to masonry walls.
- o New and old concrete / masonry walls shall be dry before installing Seratone® panels. The only true method is to measure the relative humidity of the concrete surface, using a hygrometer.
*The reading shall be below 70% before the laying of Seratone® can be considered.
- o Strapping and battens must have a damp-proof course between timber and concrete.
- o For ceilings, suitable sized battens should be spaced at 400mm maximum centres.
- o Fix strapping with nails or screws.

6.4.4 Renovations

- o When using Seratone® panels to reline over existing walls or ceilings, previously painted surfaces should be cleaned, then scuffed with coarse abrasive paper to form a key for adhesion.
- o Old shower linings must be removed before installation of new sheets. Existing framing and plumbing should be inspected to ensure no degradation has occurred.
- o Check the adhesive does not soften old paint work.

6.4.5 Check sheets & precondition

- o Always check for colour match when sheets are on the same wall plane or where colour/shade matching is critical. For areas where colour matched sheets are desired order as "batch matched" to minimise colour variation.
- o Precondition panels. Fillet stack pairs of panels and leave for at least 48 hours in the room where they will be installed.

6.4.6 Removing the packaging and protective film

- o A sheet of protective film protects the face of each Seratone® sheet. The film is designed to keep the sheet clean and to protect against scratches. The film should be removed in two stages:
 1. Initially 50mm should be removed from all edges to allow for jointing/sealing
 2. Only when the sheet is completely installed should the remainder of the film be removed

6.4.7 Cutting sheets

- o When cutting Seratone® Aqua for best results a track saw (Festool or similar) or a high speed laminate cutter (30,000 + rpm) with a 6mm blade should be used. Please refer following for Cutting Seratone® Classic and Specialty. Specific instructions for each are as follows:

Laminate cutter or router

- o Horizontally measure the top and bottom of the wall to determine the sheet width required, as not all walls are square
- o Use a ballpoint pen to gently mark these measurements onto the protective film
- o Always support the Seratone® panels, using a table or sheet material. The use of a felt blanket, or the like, reduces scratching or indentation
- o Always ensure that all cutting blades are sharpened prior to use
- o Can be used to size the sheet or alternatively to finish an edge after cutting with alternative equipment (such as fibro cement shears)
- o Allow the sheet to pass through the saw with even pressure – do not force the sheet

Circular saw

- o Normally the blade rotation of a circular saw is up. If this is the case, cut sheets with decorative surface down. If blade rotation is down, cut sheet with decorative surface face up (therefore the blade is cutting into the decorative surface, avoiding 'chip out')
- o Clamp a straight edge to the sheet as a guide for the tool. Place a piece of timber material under the line you will be cutting. This supporting material is important as it helps reduce the chipping of the decorative surface
- o Reduce the depth of cut to allow the blade to cut approximately 7mm through the sheet
- o Cut the sheet using the circular saw, cutting slowly with a sharp, high quality tooth blade

Handsaw (not recommended for Seratone® Aqua)

- o A fine-tooth hand saw may be used to cut Seratone® Classic and Specialty, with the decorative surface face up
- o Mark the sheet for the cut
- o Hold the blade of the hand saw at a very low angle, so that it is almost flat to the face of the board. Cut slowly and carefully with even strokes
- o Once cut with a hand saw, clean the cut edges with a plane or very fine sandpaper (e.g. 320 grit)

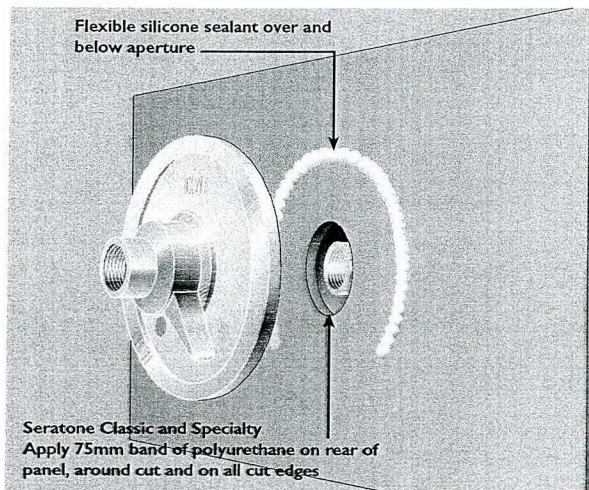
Finishing the edge after cutting

- o Use a laminate cutter, router or electric plane to finish the edge
- o When using an electric plane, ensure it is held square to the edge of the sheet. The sheet should be well supported and secured
- o Lightly chamfer any cut made to Seratone® Aqua with a block and 320 grit paper, to remove the arras and any ragged edges

Cutting for penetrations

- o Measure and mark cut outs for light boxes, pipe fittings, etc, ensuring sufficient clearance is allowed
- o Ensure that cover plate/tap flanges cover the penetrations
- o In wet areas, run a bead of silicone around fittings/cut outs on the face of the board before fitting face plates and tap flanges etc. (see Figure 6)
- o For best results with Seratone® Aqua use drill hole and use router with laminate cutter bit for holes and penetrations

Figure 6. Penetrating panels for wet area installations



6.4.8 Cutting jointers

- o Seratone® aluminium jointers and PVC mouldings can be cut with a fine toothed tungsten tipped drop saw, or a fine toothed hack saw. Ensure all cutting blades are sharp prior to use.

6.5 Fixing

Refer to Table 6.2 for jointing and fixing methods and Table 6.4 for sheet fixing instructions.

Jointing and fixing methods

Table 6.2 Jointing and fixing methods - Preferred jointing method

Application type	Aluminium mouldings	PVC mouldings	Silicone sealant
Dry area			
Wet area			
Hygiene area			
↓ ↓ ↓			
Substrate (The surface you are fixing Seratone® to)	Framing or plasterboard/lining		
Recommended fixing method	Construction adhesive or tape and construction adhesive		

* Yellow lines are silicone sealant

** An appropriate sanitary sealant for hygiene areas, such as Fuller Sanitary 770 or Gorilla Kitchen & bathroom sealant

Table 6.3 Installation using Aluminium Jointers (wet or dry areas)

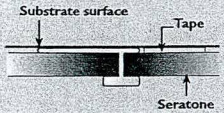
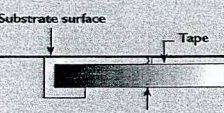
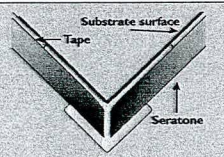
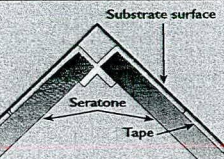
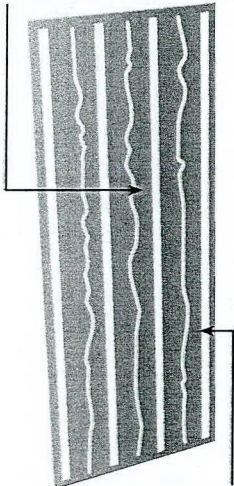
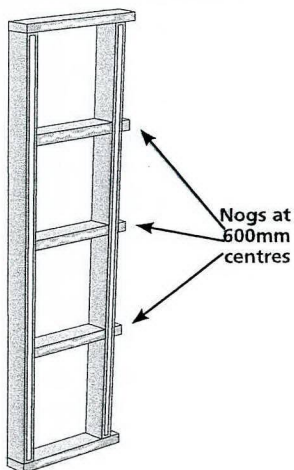
Profile	Installation details
H-Jointer 	Joining two sheets: METHOD 1: Secure panel against the existing surface, then simply slide the H Jointer onto the end of the panel. Push next panel into jointer METHOD 2: Fix jointer by way of screws, construction adhesive or double sided tape then slide panel into it. Screws should be counter sunk at 300mm centres
End Cap 	First secure the jointer, then position the panel in place. Jointer can be attached using screws, construction adhesive or double sided tape. When screw fixing, the screws should be countersunk and spaced 300mm apart
External Corner 	First secure the jointer, then position the panel in place. Jointer can be attached using screws, construction adhesive or double sided tape. When screw fixing, the screws should be countersunk and spaced 300mm apart
Internal Corner 	Engage jointer onto edge of first panel and attach panel to framing. Attach second sheet, locating the edge into jointer. Jointer can be attached using screws, construction adhesive or double sided tape if necessary. Screws should be spaced 300mm apart

Table 6.4 Fixing instructions

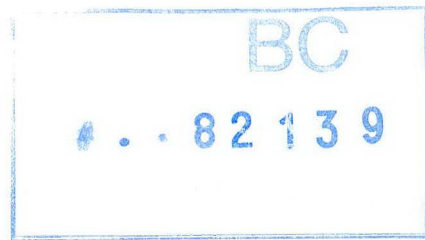
Fixing method	Construction Adhesive & Tape: wet and dry areas	
Layout of Tape or Adhesive (on framework and back of Seratone® panels)	Apply adhesive at 300mm centres and double sided tape at 400mm centres  Installation of panel with adhesive and tape method allows panels to be positioned without bracing	Apply adhesive to horizontal framing and double sided tape to vertical framing  Installation of panel with adhesive and tape method allows panels to be positioned without bracing

Double sided tape is used in conjunction with adhesives to provide temporary support during adhesive cure. This removes necessity of bracing the panels. When installing Seratone® as a ceiling lining, it's recommended to provide some bracing.

Installation without double sided tape to both plasterboard, other substrates types, and direct to timber and metal framing requires the positioning of timber supports to hold panels against wall while adhesive cures.

6.6 Fixing onto plasterboard/lining

- o Ensure all bond surfaces are clean, dry and free from dirt, dust, oils or any other surface contaminants
- o Apply continuous full panel length of double-sided tape to the back of the panel at 400mm centres
- o Apply continuous full panel length beads of adhesive no less than 10mm in diameter to the back of the panel at 300mm centres between the strips of adhesive tape
- o Remove tape backing, place the panel into desired position and apply pressure to ensure full contact over entire surface area of the panel



6.7 Fixing directly onto timber studs

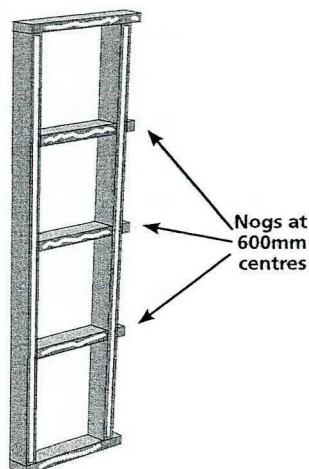
- o Nogs shall be at 600mm centres (three rows of nogs when direct fixing to framing)
- o Ensure all bond surfaces are clean and dry and free from dirt, dust, oils or any other surface contaminants
- o Apply continuous full panel length beads of double-sided tape to the right or left of centre of each vertical stud where two panels will be joined (edge stud). Allow sufficient room between the two strips of double-sided tape for the jointer to be located (no adhesive will be applied to these studs)
- o Apply continuous panel length strips of double-sided tape to the right of centre of each vertical stud that is not supporting the edge of a sheet (centre stud)
- o Apply continuous panel length beads of adhesive no less than 10mm in width next to the strips of double-sided tape on each centre stud. (each stud supporting the sheet edge should now have a strip of double-sided tape and each stud supporting the centre of the sheet should have both a strip of tape and adhesive)
- o Apply a continuous bead of adhesive over the length of the horizontal timber frame components (nogs).
- o Remove tape backing. Place the panel into desired position and apply pressure to ensure full contact between the framing and the panel

6.8 Fixing directly onto galvanised steel studs

- o Ensure all bond surfaces are clean, dry and free from dirt, dust, oils or any other surface contaminants
- o Scuff surface of galvanised framing with Scotch-Brite™ (or the like)
- o Apply a degreaser (e.g. Sika Cleaner 205 or similar) with a clean dry rag and wipe off with a separate clean dry rag
- o Allow the degreaser to fully flash off the bond surface before applying adhesive
- o Apply continuous full panel length beads of adhesive no less than 10mm in width to each stud
- o Apply a continuous bead of adhesive over the length of the horizontal steel frame components
- o Place the panel into desired position and apply pressure to ensure full contact between the steel framing and the panel
- o Position timber supports to ensure pressure is provided while the adhesive cures

Figure 7.

Apply adhesive to horizontal framing and double sided tape to vertical framing



Installation of panel with adhesive and tape method allows panels to be positioned without bracing

6.9 Installation using aluminium or PVC jointers

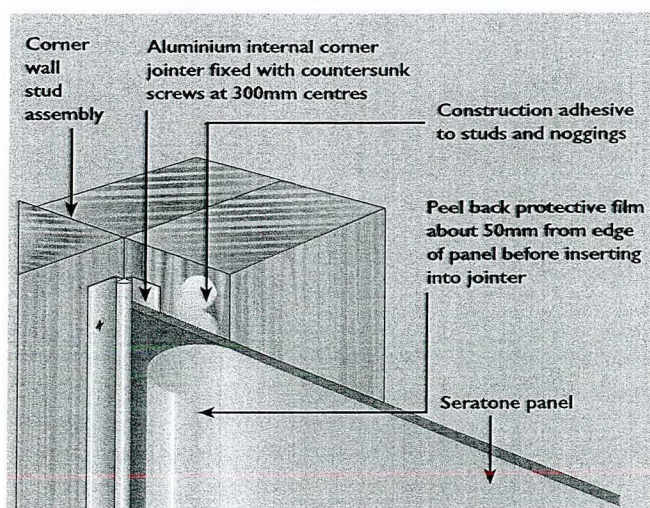
The aluminium and PVC jointing systems are designed for use in both wet and dry areas (refer to Table 6.3).

The system is suitable for installation on fully lined walls/ceilings (plasterboard) or direct to timber studs.

6.9.1 At the installation starting point:

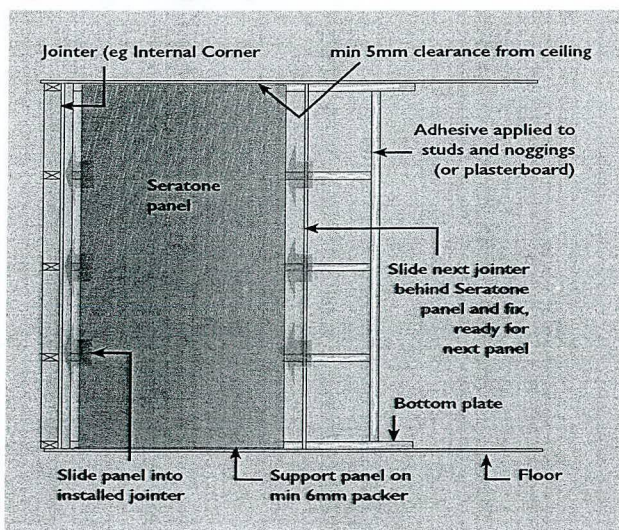
- o For cutting Seratone® Jointers, refer to Page 16
- o Mark out areas for penetrations on protective film and cut
- o Take the first Seratone® panel and peel the protective film approximately 50mm from the edge – refer to Figure 8

Figure 8. “Starting Point” using Internal Corner Jointers



- o For PVC jointers, nail jointer in place using galvanised flat head nails, at 300mm centres
- o For aluminium jointers screw fix, glue or tape in place (countersink screws at 300mm centres)
- o For all wet areas, apply a continuous bead of silicone into the jointer recess before inserting the panel
- o If you have difficulties inserting panels into the jointers, lightly sand the back of the panel – then reseal
- o Apply construction adhesive and/or double sided tape to the framing or substrate (refer to Page 17) as per manufacturers' recommendations and fixing instructions
- o Insert panel into fixed jointer
- o Press the panel firmly onto the centre stud/substrate, add jointer to trailing edge, then screw or glue fix trailing jointer into place (refer to Figure 9)
- o Continue installation by inserting each new panel into the jointer of the previous panel. Screw, glue or tape jointers to studs/substrates as installation progresses
- o Check for adhesive and silicone spillage, and clean off if necessary

Figure 9. Installing first panel



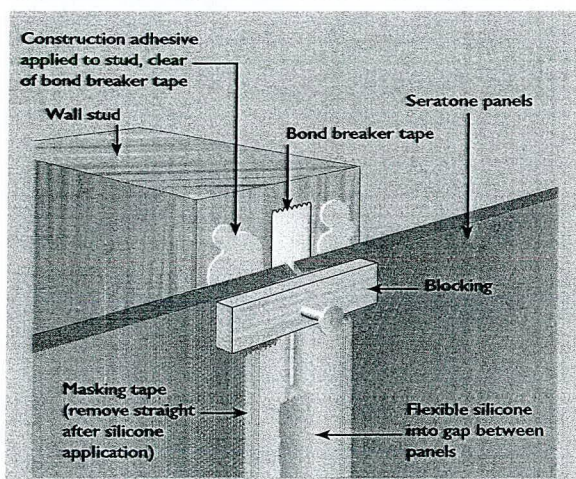
6.10 Installation using silicone joints for Seratone®

The silicone jointing system is designed for use in all areas.

The system is suitable for installation on fully lined walls/ceilings (eg. plasterboard) or direct to timber framing.

For installation using Silicone Sealant, follow the following guidelines. (Note: It is recommended that a gap based on a 1:1 ratio is created when silicone is the jointing method).

Figure 10. Installing Seratone® with silicone jointing





6.10.1 At the installation starting point

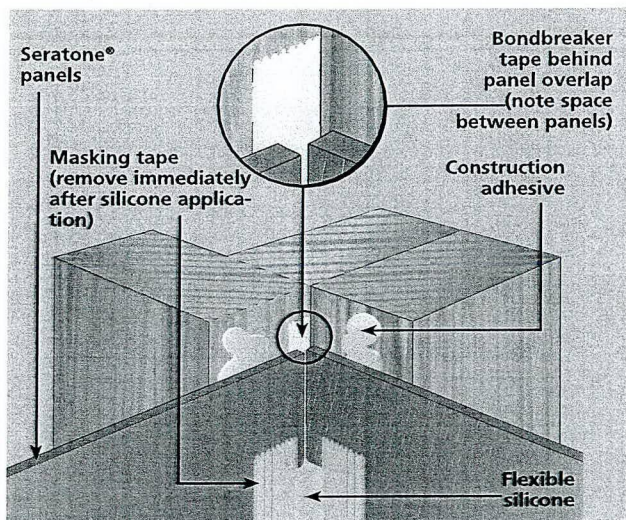
- o Determine where the joints will be and fix polyethylene tape to the framing/substrate to act as the bond breaker tape
- o Apply construction adhesive and/or double sided tape to the framing or substrate (refer to Table 6.1) as per manufacturer's recommendations and fixing instructions. Avoid applying adhesive to the bond breaker tape
- o If fixing using construction adhesive, follow the manufacturer's recommendations
- o Fix stop nails against the trailing edge of the panel to provide the required gap between sheets
- o If fixing using construction adhesive only, temporarily brace the panel edges against the stud while the adhesive cures using blocks fixed to framing with small diameter nails. If fixing using a combination of adhesive and tape, this step is not necessary as the tape will hold the panel in place while the adhesive cures
- o Continue the process until panel installation is complete
- o Carefully remove stop nails as installation progresses
- o Clean out any adhesive showing between the panels
- o Once adhesive cures, remove blocking
- o Peel approximately 50mm of the protective film from panel edges (leave balance on the panel until installation completed)
- o Carefully apply 20mm low tack masking tape to either side of the join
- o Cut nozzle of the silicone tube to create an aperture slightly larger than the gap
- o Apply a consistent bead of silicone in gap so that it is flush with panel surface
- o Once the gap is filled, remove excess silicone with a clean tool (eg. plastic spoon), or a clean gloved finger – Do not use unprotected finger
- o For internal corner joints refer to Figures 11 & 12
- o Clean any excess silicone off panel front by using a clean cloth and a cleaning agent specified by silicone manufacturer (before commencing, check the suitability of the cleaning agent on Seratone® panel surface)

6.10.2 Penetration silicone and sealant application

- o Clean any excess silicone off sheet front by using a clean cloth and a cleaning agent specified by silicone manufacturer (before commencing, check the suitability of the cleaning agent on the Seratone® sheet surface)
- o Immediately after silicone is applied, carefully remove masking tape in one continuous movement (if the silicone is allowed to cure first, removing the masking tape will result in a 'ragged' edge)
- o After tape is removed, do not touch the silicone join until it is completely cured
- o Refer to the manufacturer's instructions for the appropriate silicone sealant drying time
- o Once silicone has cured, remove remaining protective film and clean sheet surfaces

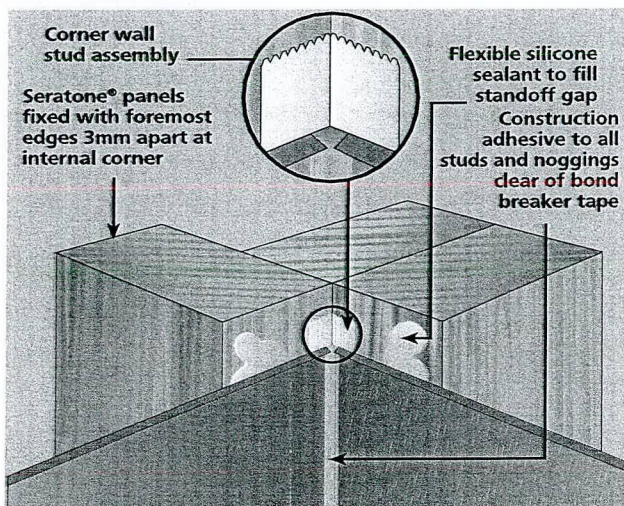
Option 1: Overlapped panels

Figure 11. Internal corner joint



Option 2: Standoff panel

Figure 12. Internal corner joint



6.10.3 Maintaining a silicone joint

- o Never wipe sealant with an UNGLOVED finger
- o The tool used to finish the sealant surface must be free of saliva
- o Mould can grow in wet or steamy areas if attention is not paid to adequate ventilation

6.10.4 Silicone usage

The amount of silicone required depends on the application, gap width and type.

As a "rule of thumb", 5 x 2.4m long joints can be achieved from one 300ml tube of silicone sealant (approximately 12m/tube).

6.11 Specific wet area installation

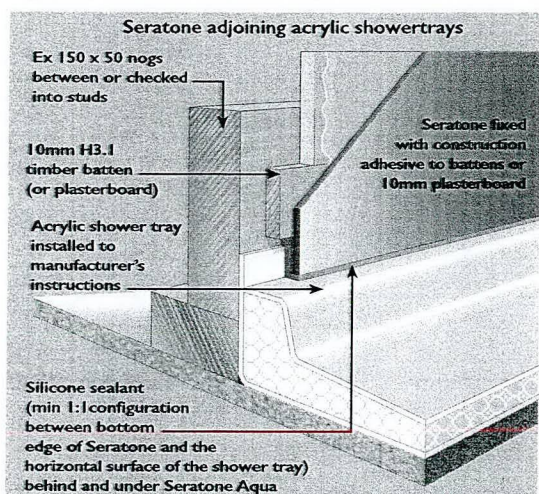
6.11.1 Shower installation options

There are numerous methods used to install a shower. Figures 13, 14 and 15 are three of the most common methods, however the principles described here must be adjusted to suit the shower tray or tile manufacturer's specific instructions. No matter which methodology you use, it is essential that:

- Any silicone sealant masking should be promptly removed
- For Seratone® Classic and Specialty - Reseal all factory and site cut edges with exterior polyurethane or primer. Also apply a 75mm band on back of panel around edges and holes cut for penetrations. For best results use two component epoxy primer such as Everdure
- On completion of any installation, remove the protective film and clean the surfaces

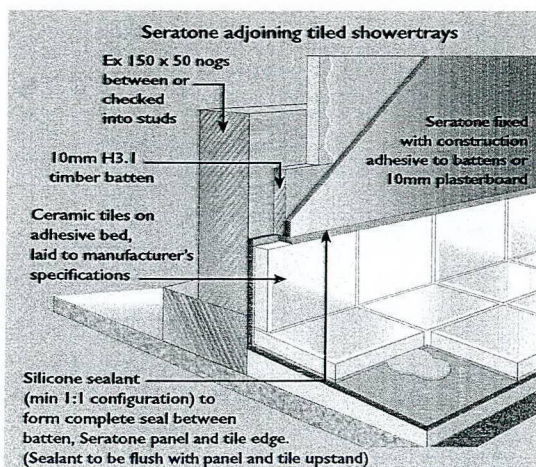
6.11.2 Method 1: Acrylic shower tray detail

Figure 13.



6.11.3 Method 2: Wall to tiled shower floor detail

Figure 14.

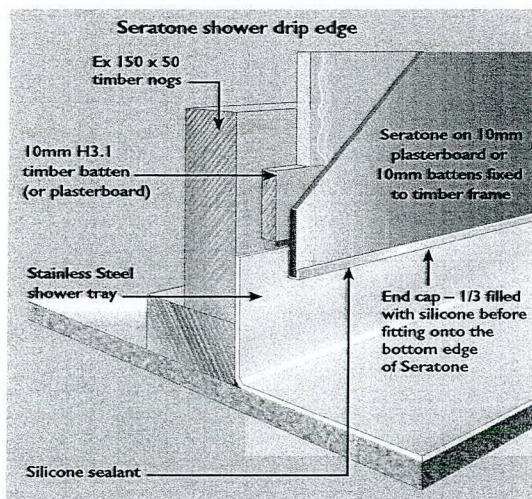


6.11.4 Method 3: Stainless steel shower tray detail

- o Gap between face of stainless and back of Seratone® sheet should be no less than 8mm
- o Seratone® to hang below the 10mm timber batten a minimum of 10mm and no more than 35mm
- o Although not mandatory, for an aesthetic appearance an End Cap (Standard Aluminium or PVC), can to be fixed to the bottom edge of the sheet. Prior to positioning the edge of the sheet into the end cap, silicone shall be applied into the jointer channel so the channel is at least 1/3 full. When the sheet is located into the channel it is likely that silicone will be forced out of the channel up the front and back of the sheet. This action should eliminate water tracking down into the channel at a later date

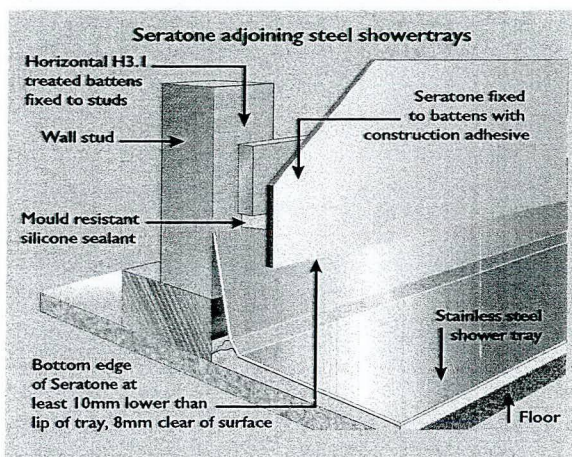
Stainless steel shower tray detail

Figure 15. Seratone® Classic and Specialty



Direct fix to framing method

Figure 15b. Seratone® Aqua Stainless shower tray



Note: When using direct fix method 3 please ensure the following:

- a) The bottom edge of the Seratone® sheet hangs below the timber batten a minimum of 10mm and a maximum of 30mm
- b) There is a gap of at least 8mm between the stainless steel upstand and the back of the Seratone® sheet
- c) A bead of sealant is applied immediately below the timber batten before the Seratone® sheet is installed



6.11.5 Bath wall installation options

There are numerous baths available from many different manufacturers. The principles shown in Figures 16 & 17 should be adjusted to suit the manufacturer's specific instructions.

- o Refer to bath manufacturer's installation guidelines and typical details.

6.11.6 Maintaining a silicone joint

- o Never wipe sealant with an UNGLOVED finger
- o The tool used to finish the sealant surface must be free of saliva
- o Mould can grow in wet or steamy areas if attention is not paid to adequate ventilation

6.11.7 Silicone usage

The amount of silicone required depends on the application, gap width and type. As a "rule of thumb", 5 x 2.4m long joints can be achieved from one 300ml tube of silicone sealant (approximately 12m/tube).

Figure 16. Typical bath edge installation Seratone®

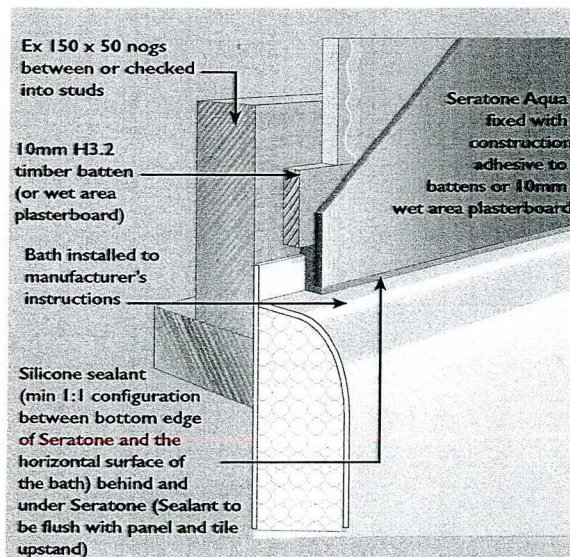
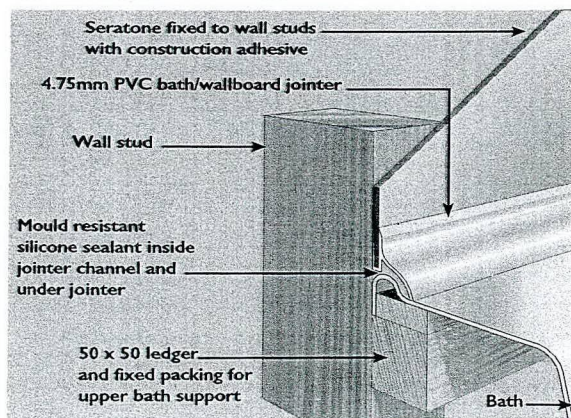


Figure 17. Typical bath edge installations for Seratone®



6.11.8 Finishing Seratone® against vinyl flooring

- o Use battens to create a gap behind the Seratone® panel. It is recommended to step the back of the Seratone® Aqua out 10mm minimum from the face of the vinyl and hang the bottom of the Seratone® Aqua sheet 10-30mm down from the batten, where water runs over the face of the sheet (see figure 18)
- o An alternative in dry areas (outside shower cubicle) a standard H jointer can be used (refer figure 19)

Figure 18. Finishing Seratone® against coved vinyl

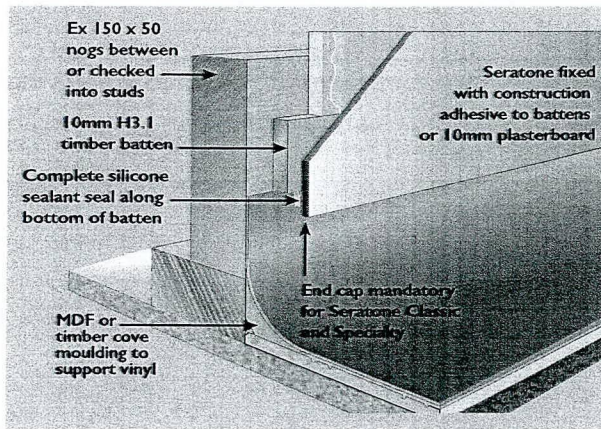
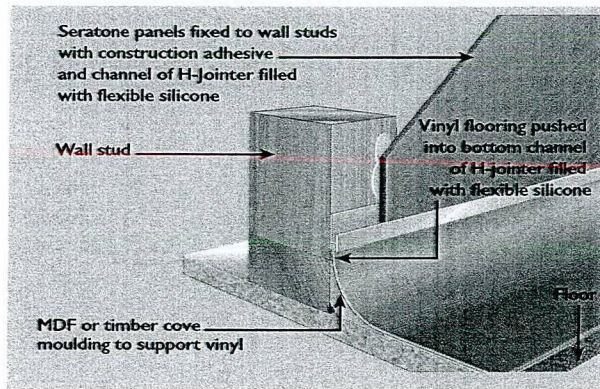


Figure 19. Coved flooring using an divisional H jointer (for use outside the shower cubicle)



Seratone®

Note: Horizontal channelled jointers should not be used in situations where water runs over the sheet face. Contact Laminex New Zealand™ for further advice.

7 Health and Safety

Health and safety precautions must be taken when working with Seratone® panel products.

Storage areas containing large quantities of Seratone® panels sheets must be adequately ventilated.

Work areas must be well ventilated and kept clean. Sawing and machining equipment must be fitted with dust extractors to ensure that dust levels are kept within standards laid down by Occupational Health and Safety New Zealand. If not, a dust mask conforming to AS/NZS 1715 and AS/NZS 1716 and eye protection conforming to AS/NZS 1337.1 must be worn.

Offcuts, shavings and dust must be disposed of in a manner that avoids the generation of dust and in accordance with the requirements of local waste authorities.

For further information and Material Safety Data Sheets, please contact Laminex New Zealand™.

7.1 Dos and Don'ts

Do

- o Do ensure all Seratone® Classic and Specialty site cut edges are sealed and factory edges are re-sealed with an oil based sealer / primer. (Seratone® Aqua edges do not require sealing)
- o Do, at design stage, take care that the chosen colour is suitable for the lighting situation. Lighter colours are more tolerant of harsh lighting environments
- o Do transport and store sheets flat and clear of ground
- o Do pre-condition sheets (separate the individual sheets and flat stack for at least 48 hours in the room to be installed. (see moisture content page 9)
- o Do measure rooms and plan the joint positions
- o Do check timber framing is dry, clean and dust free
- o Do provide a minimum 5mm gap at the floor and ceiling line to accommodate movement
- o Do test cut, for chipping
- o Do follow adhesive and silicone manufacturer's instructions
- o Do use silicone sealant in internal corners in wet areas
- o Do use silicone joints when forming horizontal joins where water will run down the face of the sheet
- o Do check panels have the same batch number
- o Do provide a minimum 6mm gap at the floor line to accommodate movement
- o Do check panel direction - factory sealed edge to bottom edge
- o Do use continuous beads of adhesive on framing or existing linings. This reduces internal panel tension, that may lead to distortion on the front of the panel
- o Do use a continuous bead of silicone in all jointers and behind all fittings in wet areas. Fill the jointer 1/3 with silicone when installing Seratone® in showers



Don't

- o Don't store sheets in areas prone to damage or exposed to weather or direct sunlight
- o Don't store the Seratone® panels sheets upright
- o Don't install in saunas or steam rooms (see content limitations, page 8)
- o Don't directly bond to masonry or concrete (use dry timber battens)
- o Don't fix sheets over wet or poorly prepared frames
- o Don't force sheets into position – always allow edge clearance
- o Don't nail Seratone® panels sheets – this destroys the surface
- o Don't use blobs of adhesive to adhere sheet to walls
- o Don't use an ungloved finger to apply silicone, as bacteria will encourage mould growth
- o Don't use abrasive cleaners or solvents on the Seratone® panels surface
- o Don't mix batch numbers where colour matching sheets is desired
- o Don't use Seratone® to form horizontal surfaces (flat) especially where water will be present
- o Don't apply hightack masking tapes to surface. Use only low tack products

8 Technical Support

8.1 Technical support

Not all use options and technical information can be described herein. Additional end use and specifying information is available as a complimentary service.

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For further information and to check the currency of the information contained in this brochure please contact Laminex New Zealand™ or visit laminex.co.nz.

9 Product Warranty

9.1 Seratone® warranty information

Laminex New Zealand™ (a division of Fletcher Building Products Limited) ("Distributor") confirms the terms and conditions of the Seratone® 15 Year Limited Warranty as set out in this document (the "Warranty") in respect of the Seratone® supplied by the Distributor to you.

Subject to the conditions and limitations set out in this warranty below, when stored, handled, installed and maintained in accordance with the Seratone® Technical Information that is current at the time of installation, Seratone® will meet the durability requirements of the New Zealand Building Code (NZBC) B2/AS1 and has a serviceable life of at least 15 years in wet areas and 5 years in all other internal applications.

If you have any questions, or in the unlikely event of a problem with Seratone®, please contact Laminex New Zealand™ Customer Services. Details are available at the bottom of this document.

Seratone® Technical Information is available online at Laminex.co.nz or by contacting Laminex New Zealand™ on 0800 303 606.

Terms and conditions

1. This warranty applies to the full range of Seratone® products supplied by Laminex New Zealand™ (subject to any exceptions noted in Laminex New Zealand™ literature) and used in interior applications subject to the terms and conditions of this warranty.
2. This warranty does not cover damage caused by:
 - a) Any act of God, any natural occurrence or any other circumstance beyond Laminex New Zealand's control; or
 - b) Application design or installation in any respect, or the failure to follow any procedures or guidance (if any) that may be issued in Seratone® Technical Information made available by Laminex New Zealand™, or best industry practices for the fabrication and installation of products in the nature of the Seratone® products (including, but not limited to, incorrect substrate preparation, or use of incorrect adhesives, or incorrect application of adhesives); or
 - c) Failure to follow the maintenance and cleaning guide for Seratone®, as set out in Seratone® Technical Information made available by Laminex New Zealand™; or
 - d) Physical abuse, misuse, accidents, impacts, incorrect handling, wear and tear, improper maintenance; or
 - e) Failure of any adhesive, grout, caulk, sealant or other accessory, or failure of any caulked or filled joint or seams; or
 - f) Events directly or indirectly attributable to the underlying substrate or structure, including building framing, building substructure or anchoring systems, or failure of any substrate or application design flaws, overloading of substrate, building movement, or any consequential or indirect loss or damage caused or contributed to by any defect; or
 - g) The product being used in applications not expressly recommended in Seratone® Technical Information made available by Laminex New Zealand™; or
 - h) Any Seratone® product that is not installed by an appropriately trained and skilled person; or
 - i) Variation in colour, pattern, shade of the material against the sample material, displays and/or printed illustrations; or
 - j) Any exterior use or application;
 - k) Where the defect is trivial or insubstantial; or
 - l) Where, as at the date of notification of the defect to Laminex New Zealand™, the type or colour of the alleged defective product no longer forms part of Laminex New Zealand's standard stock range and the person complaining of the defect does not agree to the supply of a replacement which is as close a type or colour match as is possible from Laminex New Zealand's then prevailing stock range.

3. Subject to the terms of this warranty, this warranty applies only to Seratone® products:
- a) Which have not been moved from their original place of installation;
 - b) Which have been used in an internal application;
 - c) Which have been fabricated or installed by a business which has been supplied with such Seratone® products by Laminex New Zealand™ directly, or indirectly through Laminex New Zealand's re-seller network.
 - d) Which have been fabricated, installed, maintained, cleaned, used and protected in the manner set out in Seratone® Technical Information made available by Laminex New Zealand™ concerning those products; and
 - e) Where Laminex New Zealand™ has been notified of the defect within seven days of the first person to become aware of it, or within seven days of such time as the defect ought reasonably to have been identified (whichever is earlier).
4. Subject to the terms of this warranty, Laminex New Zealand™ will, at its option, repair or replace the product free of charge. A replacement product from Laminex New Zealand™ may not be available in the same colour or shape as the original Seratone® product covered by this warranty. If a replacement product from Laminex New Zealand™ of the same colour or shape is not reasonably available, Laminex New Zealand™ reserves the right to provide a replacement product of as close a shape and colour match as is reasonably possible from Laminex New Zealand's then prevailing stock range in satisfaction of its obligations under this warranty.
5. This warranty does not cover costs or losses relating to:
- a) Removal of products or system
 - b) Installation of new substitute products or system
 - c) Restoration work
 - d) Any other direct or indirect, or consequential costs, losses, expenses or loss of earnings
6. Other than as provided in these terms, Laminex New Zealand™ will have no liability to a claimant (whether in statute, contract, tort, or otherwise at law or in equity) in respect of any defects in the product or for any loss, damage, costs or expenses caused by the product or defects in the product, provided that nothing in this paragraph 6 or otherwise in these terms excludes or modifies any legal rights you may have, including rights under the Consumer Guarantees Act 1993 (as applicable). This warranty should therefore not be read as exhaustive statement of the rights of the original end user or any other person.
7. This warranty is not transferable or assignable.

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