



General MAXIMUM Reduced Thickness Porcelain Panel Installation Specification.

This specification covers the installation of MAXIMUM Reduced Thickness Porcelain Panel to concrete, masonry or other suitably framed substrates. Refer to Architectural Drawings and Details for specific installation materials & methods for each specific area and application.

WITNESS POINTS:

Give sufficient notice, so inspections can be made by the contractor, in the presence of the builder designer or owner at designated witness points as follows:

- a. Prior to the preparation stage of the background/substrate.
- b. At the start of the preparation stage.
- c. At the start of the waterproof stage.
- d. At the start of the panel laying stage.
- e. At the start of the grouting stage.

1.0 GENERAL:

1.1 All works shall be carried out by experienced qualified trades.

2.0 SCOPE OF WORK:

2.1 Furnish all labour, materials and equipment necessary to complete the installation of the reduced thickness porcelain panels, in shock resistant, fixing and grout materials, as specified herein and where indicated in drawings and as allowed by the panel manufacturer. Install thin, load bearing waterproof membranes, as specified to floors and walls in both internal and external areas indicated in drawings.

NOTES:

2.2 This is a total system. Call out products by name, number and application to insure that specifications do not differ from manufacturer's instructions.

2.3 The following shall be inserted in the Concrete Section:

"No sealers, crystalline waterproofing additives or curing compounds shall be used on concrete slabs which are to be covered with the panels. Such slabs shall be covered and wet cured for a minimum of seven (7) days. As well, allow new concrete slabs to cure and dry for the recommended times before the installation of waterproof membrane or the reduced thickness porcelain panel. Areas requiring fill, patching or levelling shall be prepared / rendered / screeded using LATICRETE 3701 Mortar Mix in accordance with the manufacturer's instructions. Gypsum or asphalt based levelling compounds shall not be permitted. No polyvinyl (PVA) acetates shall be permitted in any substrate to receive tile. The surface, which is to be covered, shall be left clean, free of dust, plaster, sealer or curing compounds and form oil. Any contamination shall be removed by the Contractor who applied the material."

2.4 For thin-bed panel installations when a cementitious material will be used, including medium bed mortar: the maximum allowable variation in the thin panel substrate is 3mm in 3m and 1.5mm variation in 300mm when measured from the high points in the surface. For modular substrate units, such as adjacent drywall sheets, adjacent edges cannot exceed 0.8mm difference in height.



2.5 Tile and their fixing and grouting mortars do not constitute a waterproof barrier. Specify & detail LATICRETE Hydro Ban Liquid Applied Waterproof Membrane where a waterproof membrane is required.

2.6 Unless otherwise noted in this document, LATICRETE Technical Data Sheet TDS1170, product data sheets, how to guides, technical data sheets and other LATICRETE guidelines, all work should be in accordance with the MAXIMUM Technical Manual and AS3958.1 & 2.

2.7 This specification may not include all the information required to complete the works. Contact LATICRETE for any additional information.

2.8 Consult the relevant, current product data sheets and how to guides for more complete and installation information on products specified in this document.

2.9 Follow all occupational health and safety and site safety procedures. Refer to the relevant material safety data sheets for all safe handling information on the products nominated in this specification.

2.10 For the purpose of this specification all applications of the MAXIMUM Reduced Thickness Porcelain Panels are deemed to be fit for purpose and suitable for the proposed application by the manufacturer. Follow manufacturer's recommendations for use in both internal and external installations.

2.11 Concrete, masonry or cement backer board backgrounds should not have internal moisture content greater than 75% relative humidity as measured with moisture probes.

3.0 MATERIALS:

3.1 All MAXIMUM Panels, where called for, shall be as supplied by; MAXIMUM Australia. 46a Euston Road, Alexandria. NSW. 2015. Telephone 02 95198017. Email: victor@maximумаustralia.com

3.2 Renders & Concrete patching materials shall be: LATICRETE 3701 Mortar Mix.

Skim materials shall be: LATICRETE 335 Premium Flexible Tile Adhesive.

Panel Adhesive shall be: LATICRETE 335 Rapid Premium Flexible Tile Adhesive.

Tile grout materials shall be: LATICRETE PermaColor Grout.

Waterproofing & crack suppression materials shall be: LATICRETE Hydro Ban Waterproof Membrane

All waterproofing, render mortars, tile fixing and grouting materials shall be as provided by LATICRETE Pty Ltd, 29 Telford Street, VIRGINIA, QLD 4014, Australia. Telephone: 1800331012.

Email: technicalservice@laticrete.com.au Internet: www.laticrete.com.au

Installation shall be in strict accordance with manufacturer's instructions.

3.3 The bedding and grouting mortars shall be weather, frost, shock and chemical resistant.

3.4 The finished panel adhesive and grout materials shall be resistant to dilute acid, dilute alkali and brine.

3.5 All installation materials shall be compatible and from one manufacturer.

3.6 All materials shall be delivered to the job site in the original factory containers with the manufacturer's identification on each package. The addition of water or other materials to dilute



the installation materials on the job site will not be permitted.

4.0 APPROVALS AND SAMPLES:

4.1 Provide mock ups of each type/style/finish/size/colour of panels along with respective installation adhesives, mortars, grouts and other installation materials to match as close as possible the final installed environment.

5.0 HANDLING AND STORAGE OF MATERIALS:

5.1 Handle and store panel in a manner to avoid contamination & intrusion of foreign matter that may inhibit bond. Follow the MAXIMUM Technical Manual.

5.2 Handle, store, mix and apply proprietary installation materials in strict compliance with the manufacturer's instructions.

5.3 The contractor shall take precautions to protect the Mortar Additives, Admixtures from freezing or from excessive heat.

6.0 MORTAR, GROUT MIXES & WATERPROOF MEMBRANES:

6.1 Portland Cement Slurry Bond Coat:
20 kg bags LATICRETE 335 Premium Flexible Tile Adhesive

6.2 Portland Cement Renders, Levelling Beds & Scratch Coats:
20 kg LATICRETE 3701 Mortar Mix (Adjust quantity of liquid to obtain proper consistency)

6.3 Portland Cement Thick Bed Mortars & Screeds:
20 kg LATICRETE 3701 Mortar Mix (Adjust quantity of liquid to obtain proper consistency)

6.4 Portland Cement Adhesives:
20 kg bags LATICRETE 335 Rapid Premium Flexible Tile Adhesive.

6.5 Grout:
10 kg bags LATICRETE PermaColor (40 colours as per the LATICRETE colour chart)

6.6 Waterproof & Crack Suppression Membranes:
LATICRETE Hydro Ban Waterproof Membrane.

7.0 PREPARATION & CLEANING:

7.1 Inspection - Prior to commencing the installation, the contractor shall examine the areas to be covered and advise the Main Builder and Architect of any existing conditions or surface contamination, which will require correction before the work commences. Substrate must have the correct moisture content and be clean & free from form oil, curing compounds, laitance, dirt or any other foreign material that may inhibit bond. Strict adherence to the flatness tolerance in the substrate shall be observed.

7.2 Preparation - As required, the concrete substrate shall be prepared/processed by grit blast, scarifying, sand blasted, hydro blasted or by whatever method deemed by the contractor necessary to prepare the concrete surface: to expose the fine aggregate; and to present with a sound, clean



open pored surface, prior to installing render, waterproofing or adhesives. As required the framed drywall surface shall be prepared and processed to by whatever method deemed by the contractor necessary to prepare the drywall surface: to expose an uncontaminated and clean surface prior to installing render, waterproofing or adhesives.

7.3 Cleaning - As required the substrate shall be cleaned after surface preparation and processing by high pressure water cleaning (above 1500 psi at the nozzle) to clean surface dirt and contamination or weakened surface layers. Any approved cleaning agents must be completely removed, neutralized and rinsed.

8.0 MIXING:

8.1 Mixing: Mix according to printed product instructions included with each product package. Mix only long enough to wet out the batch. Do not over-mix.

9.0 SURFACE PATCHING, PLASTERING or SETTING:

9.1 Dimensional surface correction is necessary if concrete or other surfaces are not finished accurately to meet levelness or flatness tolerances for direct application of the panel using the thin bed or medium bed methods of application. Should the architect require more stringent tolerances, the substrate should reflect it.

9.2 LATICRETE 3701 Mortar Mix is shall be used as a wall render and should be mixed to a plastic consistency. Carry any underlying movement joints to the surface.

9.3 No slurry bond coat is required prior to placing wall renders or skim coats. Apply wall render or skim coat with a steel trowel pressing mortar into good contact with the prepared substrate. If required, apply "scratch coat" first – not to exceed 12mm thickness. Scratch mortar before it hardens. After "scratch coat" hardens, apply the "float coat" working the mortar into good contact with the scratch coat. Do not exceed 15mm thickness per lift. Scratch all lifts that will receive additional float coats. Float wall with steel trowel and straight edges to form a plumb and true mortar surface. Allow the completed render coats to cure for 24 hours at 21°C and allow drying to the correct moisture content prior to the installation of membrane or thin panel.

9.4 LATICRETE 3701 Mortar Mix beds are normally applied from featheredge – 50mm thick and mixed to a semi-dry consistency and placed over a latex/cement slurry bond coat consisting of LATICRETE 335 Premium Flexible Tile Adhesive bond coat. It is levelled between screed boards, thoroughly compacted and finished to the desired levels and plane.

9.5 Before placing the mortar bed, apply the LATICRETE 335 bond coat nominally 2mm thick. Place the mortar bed while the slurry bond coat is still wet and tacky. Do not apply mortar bed over skinned or dried bond coat. Re apply bond coat if it has skinned or dried prior to applying mortar bed over. Once placed - compact, strike off and finish the mortar with a steel float or wood float to the desired planes and levels. Allow the completed mortar to cure for 24 hours at 21°C and allow drying to the correct moisture content prior to the installation of membrane or thin panel.

9.6 See product data sheets, how to guides and technical data sheets for more complete information as required.

10.0 INSTALLATION OF WATERPROOF & CRACK SUPPRESSION MEMBRANE:



Note: LATICRETE Hydro Ban membrane is installed before the reduced thickness panel is installed; that are above occupied or enclosed areas; areas as specified and detailed on drawings; or areas requiring a crack isolation membrane.

10.1 Before starting, surface to be covered shall be cleaned to remove soil, dust, curing compounds, form oil, sealants, or grease. Cleaning shall be by means of high-pressure washing of previously prepared or built surfaces. Ensure surface is dry as per the requirements stated on the product data sheet before application.

10.2 Surface to be membraned shall be plumb and true to meet the flatness tolerance for the reduced thickness panel and shall be dry and have a compact, flat wood float finish or open pored steel trowel finish.

10.3 Panel may be installed directly over the membrane as soon as it is cured.

10.4 Allow membrane to cure fully. Cold weather installations will require a longer cure time.

10.5 See product data sheets, how to guides and technical data sheets for more complete information as required.

11.0 INSTALLATION OF TILE BY THE THIN BED METHOD:

11.1 The LATICRETE Adhesive shall be applied with a notched trowel using a scraping motion to work the material into good contact with the surface to be covered. A trowel having notches of sufficient size to optimize bedding is recommended. Obtaining complete mortar coverage between the porcelain panel and the substrate (100%) is absolutely essential to the long term performance of the porcelain panels. Using the appropriate specialty notched trowel (e.g. 15mm loop notch and 3mmx 3mm square notch) along with proper troweling techniques and back-buttering will make achieving complete coverage easier. To help ensure maximum coverage to both the substrate and to the back of the porcelain panels, mix the adhesive to a slightly wetter consistency than as a typical thin bed mortar (Mortar ridges must still hold their shape). Typically, the trowel ridges are applied in straight lines and should be parallel to each other when placed (unless otherwise directed by porcelain panel manufacturer). Do not allow the mortar to dry or skin over during the installation process. Care must also be taken when removing a panel to inspect the thin set mortar coverage during the installation process and while the mortar is still wet to avoid damaging the thin porcelain panels during this process. The use of the hand held "non-bounce plastic mallet" can assist in properly bedding the panels and achieving maximum adhesive mortar coverage. On site test should be carried out to determine the appropriate use of trowel to achieve; no voids in the adhesive bed; full bedding of the thin panel; and complete adhesive distribution once the thin panels are installed.

11.2 Only as much Adhesive shall be applied as can be covered while adhesive surface is still wet and tacky. The thin panel shall then be set in place manipulated to insure 100% full bedding (this means full contact of adhesive to tile & full contact of adhesive to substrate, especially at corners and edges) and a true surface. Check for required flatness. Tile shall be aligned to show uniform joints and then allowed to set until firm. The use of levelling systems is recommended for maintaining lip free installation. Clean excess adhesive from face of the panels and joints between pieces.

11.3 See adhesive product data sheets, how to guides and technical data sheets for more complete information as required.

12.0 EXPANSION, MOVEMENT AND CONTROL JOINTS:



12.1 Provide movement, control or expansion joints as located in the contract drawings and in full conformity, especially in width and depth, with architectural details and the panel manufacturer.

- A. Substrate joints must carry through, full width to surface of the panel.
- B. Install movement joints in panel work over construction/cold joints or control joints in substrates.
- C. Install 5-7mm movement joints where panel abut restraining surfaces (such as perimeter walls, curbs, and columns), changes in plane and corners.
- D. Joint width and spacing depends on application – follow panel manufacturer’s recommendations.
- E. Joint width: $\geq 3\text{mm}$ and $\leq 15\text{mm}$.
- F. Layout joint pattern: 1:1 is optimal but must be $\leq 2:1$.
- G. Remove all contaminants and foreign material from joints void/surfaces such as dirt, dust, oil, water, setting material and the like. Install appropriate backing materials based on movement joint design or as specified. Follow sealant manufacturer’s instructions.

Notes to specifier

The responsibility for calculating the actual spacing and size of the expansion joints shall be by the architect/engineer.

13.0 GROUTING AND POINTING JOINTS:

13.1 Joints shall be grouted or pointed with LATICRETE PermaColor Grout. Remove all adhesive between sheets during installation.

13.2 Joints shall be a minimum of 5-10mm for external use, packed full and free of all voids and pits. (Tool or rake as specified).

13.3 Excess grout shall be cleaned from the surface with water and a damp sponge as the work progresses, while grout is fresh and before it hardens.

13.4 The day after installation grout film or haze shall be removed using a detergent solution.

13.5 See product data sheets, how to guides and technical data sheets for more complete information as required.

14.0 PROTECTION & CLEANING:

14.1 During installation of the waterproof membrane, renders, tile adhesive and grout the contractor shall take precautions to protect the work.

14.2 Allow a minimum of 72 hours for cure time at 21°C prior to exposing floor installations of thin-body porcelain panels to light foot traffic only. Regardless of whether rapid or normal setting thin set / medium bed mortars are used, LATICRETE typically requires that floors need to be protected from heavy traffic, lifts, etc... for at least 7 days at 21°C. Full cure typically occurs in 28 days at 21°C. However, cooler temperatures (and other climatic conditions) and the size of the porcelain panels can impact the cure rates. In addition, anytime heavy lifts or other equipment is exposed to the floor, protection of the tile should be put into place (typically 20mm thick plywood / OSB). Allow a minimum of 72 hours for cure time at 21°C prior to exposing wall installations of thin-body porcelain panels to impact. Full cure typically occurs in 28 days at 21°C. However, cooler temperatures (and other climatic conditions) and the size of the porcelain panels can impact the cure rates.



14.3 Cold Weather Note: The curing of; waterproof membranes, tile fixing adhesives and grouts, are retarded, by low temperatures. Finished work should be protected for an extended period of time.

14.4 The contractor shall take precautions to protect the finished work from damage by other trades. Allow the grout to cure for a minimum of 7 days before steam cleaning or using aggressive cleaning techniques.

14.5 Clean excess mortar from veneer surface with water before it hardens and as the work progresses. Do not contaminate open grout or movement joint voids while cleaning. Sponge and wash veneers diagonally across joints. Do not use acids for cleaning. Polish with clean dry cloth. Remove surplus and leave premises broom clean.

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