Reduced Thickness Porcelain Panel & Tile Installation Specification over Concrete & Cement Masonry. 15 Year System Warranty.

This specification covers the installation of a suitable Reduced Thickness Porcelain Panel or large format tile, to concrete or cement masonry unit (CMU) facades. 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, specifier, owner or any other persons deemed relevant, as required.

Witness points:
   a. Prior to the preparation stage of a suitable concrete or CMU surfaces.
   b. At the start of the rendering 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 panels/tiles, in shock resistant, grouting and fixing materials, as specified herein and where indicated in drawings. Install thin, load bearing waterproof membranes, as specified to walls to external areas as indicated in drawings.

NOTES:

2.2 This is a total system. Call out products by name, number and application to ensure 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 or CMU surfaces which are to be covered with panel or tile. Concrete slabs shall be covered and wet cured for a minimum of seven (7) days. Allow new concrete slabs to dry before the installation of mortars, waterproof membrane or tile. Areas that are to receive panel/tile work, installed by the thin bed method shall; have a wood float finish or open pored steel float finish; be true to within 3 mm in 3 m from the required plane and 1.5mm in 600mm when measured from the high spot. Areas requiring fill, patching or levelling shall be prepared / rendered using LATICRETE 3701 Mortar Admix / LATICRETE 226 Thick Bed 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 Tile and there, fixing and grouting mortars do not constitute a waterproof barrier. Detail LATAPOXY Moisture Shield and LATICRETE HYDRO BAN Liquid Applied Waterproof Membrane where a waterproof membrane is required.

2.5 Unless otherwise noted in this document, product data sheets, how to guides, technical data
sheets and other LATICRETE guidelines, all work should be in accordance with the Panel manufacturers Technical Manual and AS3958.1 & 2 and AS4654.1 & 2.

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

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

2.8 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.

2.9 Consult and follow the current panel or tile manufacture’s technical manual regarding: substrate condition, preparation and treatments; and general installation guidelines prior to installing these thin panels or tiles. Follow the guide for the maximum allowable format size, for any given environment and service duty requirement.

2.10 In addition to the requirements of others, surfaces must be structurally sound, stable and rigid enough to support panel or tile and similar finishes. Substrate deflection which includes the cement backer board, under all live, dead and impact loads, including concentrated loads, must not exceed L/360 for thin bed porcelain panel/tile installations where L=span length.

2.11 Concrete and CMU substrates should be dry and not have moisture equilibrium greater than 75% relative humidity.

2.12 Contact LATICRETE for a custom project specification

3.0 MATERIALS:

3.1 All panels, where called for, shall be as supplied by ..............................................................

3.2 Skims coat materials shall be: LATICRETE 254 Platinum Adhesive.
Renders and shallow levelling material shall be: LATICRETE 3701 Latex Admix and 226 Thick Bed Mortar.
Waterproofing & crack suppression materials shall be: LATICRETE HYDRO BAN Waterproof Membrane & LATAPOXY Moisture Shield.
Panel Adhesive shall be: LATICRETE 254 Platinum Adhesive.
Tile grouting materials shall be: LATICRETE PERMACOLOR Grout.
Tile sealant materials shall be: LATICRETE LATASIL Sealant and LATASIL 9118 Primer.

All waterproofing, mortars, tile fixing and pointing materials shall be as provided by LATICRETE Australia Pty Ltd, 29 Telford Street, VIRGINIA, QLD 4014, Australia. Telephone: 1800331012. Email: technicalservices@laticrete.com.au Web: www.laticrete.com.au

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

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

3.4 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 the panel/tile 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 Panels 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 installation materials from freezing or from excessive heat.

6.0 SKIMS, WATERPROOF MEMBRANES, ADHESIVES & SEALANTS:

6.1 Latex Cement Skims:
20 kg LATICRETE 254 Platinum Adhesive (Adjust quantity of liquid to obtain proper consistency)

6.2 Latex Cement Renders and Shallow Levelling Coats:
8 x 20 kg bags LATICRETE 226 Thick Bed Mortar Mix
20 litre pail LATICRETE 3701 Latex Admix

6.3 Waterproof Membrane:
15 litre pail LATICRETE HYDRO BAN Waterproof Membrane.
20 litre unit LATAPOXY Moisture Shield
600ml sausage LATICRETE HYDRO BAN Fillet & Sealant.

6.4 Latex Cement Based Adhesive:
20 kg bags LATICRETE 254 Platinum Tile Adhesive.

6.5 Cement Grout
10 kg bags LATICRETE PERMACOLOR Grout.

6.6 Movement Joint Sealant:
305 ml Tube LATICRETE LATASIL Sealant
240ml Bottle LATICRETE LATASIL 9118 Primer

7.0 PREPARATION & CLEANING:

7.1 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 be dry, clean & free from form oil, curing compounds, laitance, dirt or any other foreign material that may inhibit bond.

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.
7.3 As required the substrate shall be cleaned after surface preparation and processing to clean surface dirt, contamination or weakened surface layers prior to the installation process. 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 SKIMMING OR LEVELLING:

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 stone using the thin bed methods of application.

9.2 Renders - LATICRETE 3701/226 Mortar Mix as a wall render should be mixed to a plastic consistency. As a plaster/render mix no slurry bond coat is required prior to placing wall renders. Apply wall render with a steel trowel pressing mortar into good contact with the prepared substrate. 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 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 prior to the installation of membrane or tile.

9.3 Skimming - Where skimming or shallow levelling coats are required in small areas, LATICRETE 254 Platinum Tile Adhesive can be used. Mix to a plastic consistency and apply to the surface with the straight edge of the trowel. Work in layers, nominally 2-3mm thick between coats. Scratch and allow to dry between coats.

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

10.0 INSTALLATION OF WATERPROOF MEMBRANE:

Note: The LATICRETE HYDRO BAN membrane is installed before thin panel is installed. Install LATAPOXY Moisture Shield prior to HYDRO BAN where high moisture vapour emission rates or damp/wet conditions exist.

10.1 Before starting, surface to be covered shall be cleaned to remove soil, dust, curing compounds, form oil, sealants, or grease. Ensure surface is dry as per the requirements stated on the product data sheet before application.

10.2 Surface to be waterproofed shall be plumb and true to meet the flatness tolerance for the large panel and shall be dry and have a compact finish.

10.3 Where required, apply a liberal application of the LATAPOXY Moisture Shield, nominally 24 hours before the membrane. Apply two coats of HYDRO BAN, allowing drying between coats. 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 254 Platinum 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. European Tile Masters Euro Notch Trowel or Raimondi Flow Ridge Slant Notch Trowel) along with proper trowelling 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 adhesive 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 hand held “vibrating” pads and specialised laying frames can assist in properly bedding the panels and achieving maximum adhesive mortar coverage. On site test should be carried out to determine the appropriate trowel size to target; no voids in the adhesive bed; full bedding of the thin panel; and complete adhesive distribution once the thin panels are installed. Avoid applying uneven applications of adhesive.

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

11.3 See 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 panel manufacturers manual.
   A. Substrate joints must carry through, full width to surface of the panel.
   B. Install movement joints where panel abut restraining surfaces (such as perimeter walls, curbs, and columns), changes in plane and corners.
   C. Joint width and spacing depends on application – follow panel manufacturer’s recommendations.
   D. Joint width: ≥ 5mm and ≤ 15mm. Consult manufacturer’s manual.
   E. Layout joint pattern: 1:1 is optimal but must be ≤ 2:1.
   F. 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.

12.4 Movement joint sealant shall be LATICRETE LATASIL Sealant. Prime as required. Use polyethylene bond breaker tapes and backing rods as required.

13.0 POINTING JOINTS:

13.1 Joints shall be pointed with LATICRETE PERMACOLOR Grout.

13.2 Joints shall be (see panel technical manual for widths) packed full and free of all voids and pits. (Tool or rake as specified).

13.3 Excess grout shall be cleaned from the surface as the work progresses, while still fresh and before it hardens.

13.4 The day after installation any 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 skims, waterproof membrane, tile adhesive and sealant the contractor shall take precautions to protect the work.

14.2 Allow sufficient time prior to putting thin panel floors into full service. See panel technical manual.

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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