Rapid Transit Projects – General Ceramic Tile Fixing Specification.
15 Year System Warranty.

This specification covers the installation of ceramic tiles to a rapid transit project where the performance of a system rated as Extra Heavy Duty is required. 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, if required.

Witness point:

a. At the preparation stage of new or existing concrete surfaces.
b. At the start of the floor screed stage.
c. At the start of the waterproof stage.
d. At the start of the tiling 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 ceramic tile, in an extra heavy-duty installation system comprising of chemical and shock resistant, grouting and fixing materials, as specified herein and where indicated in drawings. Install thin, load bearing waterproof membranes, as specified and indicated in drawings if required.

NOTES TO SPECIFIER:

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 which are to be covered with tile. Such slabs shall be covered and wet cured for a minimum of seven (7) days. Allow new concrete slabs to cure before the installation of tile or waterproof membrane. Areas that are to receive tile, 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 spots. Areas requiring fill, patching or levelling shall be prepared / rendered / screeded using LATICRETE 3701 Mortar Admix / LATICRETE 226 Thick Bed Mortar, 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. Specify & detail LATAPOXY Moisture Shield, where required, and LATICRETE HYDRO BAN Liquid Applied Waterproof Membrane where required.
2.5 Surfaces must be structurally sound, stable and rigid enough to support ceramic tile, thin brick and similar finishes. Substrate deflection under all live, dead and impact loads, including concentrated loads, must not exceed L/360 for thin bed ceramic tile installations where L = span length.

2.6 Unless otherwise noted in this document, product data sheets, how to guides, technical data sheets and other LATICRETE guidelines, all work shall be in accordance with AS3958.1 & 2 and AS4654.1&2.

2.7 This is not a master specification and 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 SDS for all safe handling information on the products nominated in this specification.

2.10 Concrete or other substrates should not have internal moisture content greater than 75% relative humidity as measured with moisture probes.

2.11 For the purpose of this specification the tile is deemed to be dimensionally stable and fit for purpose and suitable for the proposed application by the manufacturer/supplier. Consult LATICRETE if there is a backing on the tile.

2.12 Contact LATICRETE for a Custom Specification

3.0 MATERIALS:

3.1 All tiles, where called for, shall be as supplied by (…………………………………………………..……)

3.2 Slurry bond coats shall be LATICRETE 254 Platinum Adhesive.

Renders, Screeds & Concrete patching materials shall be: LATICRETE 3701/226 Latex Portland cement Mortar.

Tile adhesives materials shall be: LATICRETE 254 Platinum Adhesive.

Tile grout materials shall be: LATICRETE PERMACOLOR® or LATICRETE SPECTRALOCK PRO Premium Grout for greater chemical resistance

Waterproofing & crack suppression materials shall be: LATICRETE HYDRO BAN Waterproof Membrane and LATAPoxy Moisture Shield (if required).

Movement Joint sealant shall be: LATICRETE LATASIL and LATICRETE LATASIL 9118 Primer.

All waterproofing, render mortars, tile fixing and grouting 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: au.laticrete.com

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

3.3 All, mortar, grout additives, waterproof membranes and adhesives shall be covered by a manufacturer’s Certificate of Compliance.

3.4 The bedding and grouting mortars shall be rated extra heavy duty and vibration, impact, shock, weather, frost and chemical resistant.

3.5 The finished tile adhesive and grout materials shall be resistant to chlorine, bromine, urine,
dilute acid, dilute alkali, sugar, brine and food waste products.

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

3.7 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 The supplier of installation materials shall have been regularly engaged in the manufacture of these materials for a minimum of ten (10) years, and shall submit to the architect a list of three similar installations, each having a minimum of five (5) years’ service.

4.2 Provide mock-up of each type/style/finish/size/colour of tiles, trim unit and threshold, along with respective installation adhesives, mortars, grouts and other installation materials for assessment.

5.0 HANDLING AND STORAGE OF MATERIALS:

5.1 Handle and store tile in a manner to avoid contamination & intrusion of foreign matter that may inhibit bond.

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 Latex Portland Cement Slurry Bond Coat:
20 kg bag LATICRETE 254 Platinum Adhesive

6.2 Latex Portland Cement Renders, Levelling Beds & Scratch Coats:
8 x 20 kg bags LATICRETE 226 Thick Bed Mortar Mix
20 litres LATICRETE 3701 Mortar Admix (Adjust quantity of liquid to obtain proper consistency)

6.3 Latex Portland Cement Thick Bed Mortar & Screeds:
11 x 20 kg Bags LATICRETE 226 Thick Bed Mortar Mix
20 litres LATICRETE 3701 Mortar Admix (Adjust quantity of liquid to obtain proper consistency)

6.4 Waterproof & Crack Suppression Membrane:
15 litre LATICRETE Hydro Ban Liquid Applied Waterproof Membrane.
20 Litre LATAPOXY Moisture Shield (as required)
600ml sausage HYDRO BAN Fillet & Sealant

6.5 Latex Portland Cement Adhesive:
20 kg bag LATICRETE 254 Platinum Adhesive

6.6 Grout:
10 kg LATICRETE PERMACOLOR Grout. (Select colour from the LATICRETE grout chart)
Or
LATICRETE SPCTRALOCK PRO Premium Grout. (Select colour from the LATICRETE grout chart)

6.7 Movement Joint Sealant:
305ml tube LATICRETE LATASIL Sealant
240ml can LATICRETE LATASIL 9118 Primer

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 be 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 mortars, waterproofing or adhesives.

7.3 Cleaning - As required the concrete substrate shall be cleaned after surface preparation and processing by high pressure water cleaning 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 RENDERING, MORTAR BEDS & SCREEDING:

9.1 Dimensional surface correction is necessary if concrete is not finished accurately to meet the above levelness or flatness tolerances for direct application of waterproof membrane or tiling using the thin or medium bed methods of application.

9.2 Renders - LATICRETE 3701/226 Mortar, 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 Screeds - LATICRETE 3701/226 Mortar is 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 254 Platinum Adhesive, levelled between screed boards and thoroughly compacted.

9.4 Before placing the mortar bed, apply latex Portland cement slurry bond coat of LATICRETE 254 nominally 2mm thick and work well into the surface. 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.
9.5 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: In cases where moisture vapour emission rates (MVER) or substrate wetness are excessive, LATAPOXY Moisture Shield shall be used to reduce MVER or wetness to an acceptable level.

10.1 Before starting, surface to be covered shall be to the flatness tolerance and cleaned to remove soil, dust, curing compounds, form oil, sealants, or grease. Where required, apply LATAPOXY Moisture Shield immediately prior to the HYDRO BAN application and allow to dry.

10.2 Apply two coats of HYDRO BAN after the Moisture Shield has dried and nominally within 24 hours. Allow drying between coats.

10.3 Tile may be installed directly over the membrane as soon as it is dry.

10.4 Flood test critical installations. 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 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. 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 tile and complete adhesive distribution once the tiles are installed.

11.2 Only as much Adhesive shall be applied to the substrate as can be covered within 5 to 15 minutes or while adhesive surface is still wet and tacky. Prior to placing the tile, an amount of adhesive shall be applied evenly to the back of the entire tile. Tile 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) and a true surface. Tile shall be aligned to show uniform joints and then allowed to set until firm. Clean adhesive from the face of the tiles and joints whilst still fresh. Adhesive can be cleaned with a wet cloth or sponge.

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 Existing joints in subsurface must be carried through tile work and shall conform to architectural details.

12.2 Movement joints shall be installed where tile, screeds and renders abut restraining surfaces, such as perimeter walls, curbs, penetrations, columns, corners, etc. Expansion joints shall be installed at all "changes of plane" in the tile work, renders and screeds. Refer to Australian Standards AS3958.1 & 2 for more details.
12.3 Refer to architects & engineers’ drawings for full details on expansion, control, isolation or movement joints. (Do not tile, screed or render over construction joints).

Notes to specifier
The responsibility for calculating the actual spacing and size of the expansion joints shall be by the architect/engineer. The Optimum ratio of joint layout, length to width, is 1:1, and shall not be greater than 2:1.

12.4 Joints shall be sealed with LATICRETE LATASIL Sealant and LATASIL 9118 Primer as required. Ensure joint voids are clean and appropriate polyethylene bond breakers or backing rods are used.

13.0 GROUTING AND POINTING JOINTS:

13.1 Joints shall be grouted or pointed with LATICRETE PERMACOLOR as required. Use LATICRETE SPECTRALOCK PRO Premium Grout where chemical resistance is required. Do not use SPECTRALOCK PRO Premium Grout on external facades.

13.2 Certain types of tile are more absorbent than others and will trap colour pigment during grouting. Prior to grouting, test for absorption of colour pigment. Porous tiles will need to be sealed prior to grouting.

13.3 Joints shall be packed full and free of all voids and pits. (Tool or rake as specified).

13.4 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.

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

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

14.0 PROTECTION:

14.1 During installation of the waterproof membrane, screeds, renders, tiling and grouting the contractor shall take precautions to protect the work from varying adverse weather conditions.

14.2 The contractor shall take precautions to protect the finished work from damage by other trades. Do not allow construction traffic on fresh grout joints. Allow the grout to cure for a minimum of 7 days before steam cleaning or using aggressive cleaning techniques.

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

15 CLEANING & SURFACE SEALING.

15.1 The tiles on this project shall be cleaned and sealed with LATICRETE STONETECH Sealers and Cleaners as appropriate for the specific tile installation.

15.2 Consult the product data sheet and technical guides prior to use. For further information contact stonetech@laticrete.com.au Test prior to use in a small unobtrusive area.
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Drawing No. AES-F101F  Bonded system including mortar bed on concrete

LATICRETE® PERMACOLOR™ Grout
Ceramic Tile
LATICRETE 254 Platinum Adhesive
HYDRO BAN Membrane
LATAPoxy Moisture Shield
LATICRETE 3701 Mortar Admix Gauged with 226 Thick Bed Mortar
LATICRETE 254 Platinum Slurry Bond Coat
Concrete