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The successful installation of porcelain landscape tile from Unilock is dependent on the structural integrity of what lies below the surface of the slabs. This will include many factors such as wood or concrete decking integrity, site drainage, cutting, and quality of concrete mortars and grouts.

**INSTALLATION NOTES**

1. All installations and their respective bases indicated in this guide, should always be installed on undisturbed native subsoil. Provisions for drainage and load-bearing capacity are ultimately the installer’s responsibility and can be managed by slope, drains or depth of base.

2. Only use cementitious adhesives, modified mortars and grouts that are approved for exterior use. Always observe manufacturer’s directions and be sure to conform to all ACI (American Concrete Institute) and PCA (Portland Cement Association) standards. Always install in accordance with ASTM C615, Standard Specification for Granite Dimension Stone; ANSI/CTI A108.1, Specification for the Installation of Ceramic Tile; and Terrazzo Tile and Marble Association of Canada (TTMAC), Specification Guide 09 30 00 Tile Installation Manual.

3. Building code requirements may vary. Always review local building codes prior to design and construction.

4. Use only approved geotextiles and geogrids.

5. **DO NOT** compact the surface of porcelain landscape tile with a plate compactor.

6. Porcelain landscape tile installations must always have joints 1/8” - 3/16” (3mm - 4mm). The use of spacers is recommended.

7. Use only diamond blades specifically designed for cutting porcelain landscape tile. Always “wet-cut” porcelain landscape tile and wash slurry residue before installing.

8. Impervious sub-structures must always be sloped for drainage or be designed with provisions for drainage.

9. Thicknesses of base, concrete and bedding indicated in these details are typical. Actual design specifications should always be determined by a qualified professional. All base materials must be placed over undisturbed subsoil and compacted to 95% SPD. Never lay product on topsoil.

**PERSONAL PROTECTIVE EQUIPMENT (PPE)**

Personal Protective Equipment (PPE) should be worn on site such as goggles, N100 stone dust rated masks and gloves, especially when the units are being cut. A minimum requirement for personal protective equipment on site should include a hardhat, protective gloves, protective shoes and high visibility clothing.

**DISCLAIMER**

The cross sections and diagrams included in this document are intended for the preliminary design and installation of porcelain landscape tile. Unilock cannot guarantee and will not be held responsible for any installation failure and accepts no liability for the improper use of these details.

It is the installer’s responsibility to ensure that all site and structural factors are properly addressed and a structural engineer may be required to provide site-specific engineering and installation specifications.

**NOTE:** Unilock cannot guarantee the tensile strength of porcelain landscape tile for pedestal applications or when substructures shift or deteriorate.
WOOD DECK VENEER
- STRUCTURAL UNDERLAYERMENT FOR ELEVATED DECKS

Unilock Porcelain Landscape Tile
3/4” (20mm) thick

Non-woven geotextile - Min 3.1 oz

Structural underlayment designed for use under pavers and slabs. Refer to manufacturer’s specification for installation

For joints 1/8” - 1/2” (2.5mm - 13mm) use polyurethane sealant caulk or haze free polymeric sand (pattern and texture dependent). Unilock Easy-Pro™ jointing compound can also be used

Unilock Natural Stone or Ledgestone™ Coping adhered with modified mortar tile adhesive - 1/4” (6mm) notched trowel

Wire lath and modified mortar scratch coat

Marine grade plywood 3/4” (20mm)

Note: The success of any porcelain installation over wood decking is entirely dependent on the decking structure. Always refer to underlayment manufacturer’s specification for new or existing deck installations, and always follow local building codes.

To accommodate varying heights, structural underlayment can also be cut and recessed between joists.
WOOD DECK VENEER
- LOW PROFILE PEDESTAL

Unilock Porcelain Landscape Tile 3/4" (20mm) thick
Joint ranges may vary 1/8"-1/4" (2.5mm - 6.4mm) according to spacers or desired appearance
1 1/4" (31.75mm) pedestal (install as per manufacturer)
Unilock Ledgestone™ perimeter edger
Wire lath with modified mortar scratch coat
2 x 6 - Deck boards (must be in good structural condition and not cupped or warped)
Porcelain, cedar or composite decorative fascia panel adhered using structural outdoor wood adhesive
SAFETY NOTE: NEVER INSTALL PORCELAIN FASCIA IN OVERHEAD APPLICATIONS.

NOTE: The longevity of this installation method is directly related to the quality and structural integrity of the wood decking materials.
NEW OR EXISTING CONCRETE PATIO, PORCH OR BALCONY OVERLAY
- MODIFIED MORTAR BEDDING

Use this detail if the concrete pad surface is flat, slopes correctly and is in good condition.

- Saw-cut control joints
- Unilock Porcelain Landscape Tile 3/4" (20mm) thick
- 3/16" (5mm) joint with impervious polymeric jointing sand or modified latex grout or polyurethane sealant/caulk (must be suitable for exterior horizontal surfaces)
- Poured-in-place reinforced concrete slab 4" - 8" (100mm - 200mm) thick 2% slope for drainage
- Modified mortar bedding Using 1/4" - 3/8" (6mm - 10mm) notched trowel
- Note: when going over existing concrete, ensure that the surface of the slab is both cleaned and etched prior to adhering tiles
- Geo-textile / geogrid

Unilock Porcelain Landscape Tile 3/4" (20mm) thick
For joints 3/16" (5mm) use impervious polymeric jointing sand, modified latex grout or polyurethane sealant/caulk suitable for exterior horizontal surfaces
1/4" (6mm) Foam Backer Rod (reduces amount of caulking required)
 Modified Mortar Bedding Using 1/4" - 3/8" (6mm - 10mm) notched trowel
Rebar reinforced concrete slab
Locate saw-cut control joints in accordance with ACL and PCA. Position saw-cuts directly under paving unit joints wherever possible
EXISTING CONCRETE PATIO, PORCH OR BALCONY OVERLAY
- CEMENTITIOUS BEDDING

Use this detail if existing concrete surface is uneven or in poor condition.

Unilock Porcelain Landscape Tile 3/4" (20mm) thick

3/8" (10mm) joint with impervious polymeric jointing sand or modified latex grout or polyurethane sealant/caulk (suitable for exterior horizontal surfaces)

Cementitious bedding - Maximum 1" (25mm) troweled

Saw-cut control joints (see below)

Bond/Slurry coat (brushed on)

Existing poured-in-place concrete slab

Sufficient base must be used to prevent frost movement 6" - 8" (150mm - 200mm) recommended

Geotextile

3/8" (10mm) joint with impervious polymeric jointing sand or modified latex grout or polyurethane sealant/caulk (suitable for exterior horizontal surfaces)

1/4" (6mm) Foam Backer Rod (reduces amount of caulking required)

Cementitious bedding - Maximum 1" (25mm) Troweled

Unilock Porcelain Landscape Tile 3/4" (20mm) thick

Bond/Slurry coat

Locate saw-cut control joints in accordance with ACI and PCA
Position saw cuts directly under joints between paving units whenever possible.

Existing poured-in-place concrete slab
OPEN GRADED BASE - RIGID BEDDING (STABILIZED CHIP)
- FULLY PERMEABLE

Unilock EnduraColor™ Plus paver edger

Unilock Porcelain Landscape Tile 3/4" (20mm) thick
Joint spacing approx. 3/8" (10mm)

Use polymeric jointing sand for joints over
1/8" (2.5mm) wide

2" (50mm) thick layer of cement stabilized chip*
made with open graded 3/16" (5mm) - 3/8" (10mm)
(ASTM NO.8 or 9) - Must cure overnight prior to stone placement

Modified mortar thin-set (back buttered to slab using
a 3/8" - 1/2" (10mm - 13mm) notched trowel
(assists leveling and adhesion)

Permeable geotextile / geogrid

*Note: Cement stabilized chip is a mixture of 80% open graded chip and 20% portland cement with enough water to create a pasty yet flow-able mix.
**OPEN GRADED BASE - FLEXIBLE BEDDING**
- FULLY PERMEABLE

- Undisturbed Native Subsoil
- Topsoil
- 8” - 12” (200mm - 300mm) of 3/4” (20mm) clear open-graded gravel (ASTM No.57)
- Unilock Porcelain Landscape Tile 3/4” (20mm) thick
- Joint spacing approx. 1/8” - 1/2” (2.5mm - 10mm)
- Low profile spacer disk - max 1/8” (2.5mm high)
- Use permeable polymeric jointing sand or EasyPro™ jointing compound for joints over 1/4” (5mm) wide
- 1 1/2” - 2” (30mm - 50mm) screeded layer of open-graded chip (ASTM 8, 9, or 10)
  (Also known as HPB)
- Plastic or aluminum edge restraint spiked in or poured in place concrete curb
- Permeable geotextile / geogrid

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**PEDESTAL ON CONCRETE APPLICATION**

- Unilock Porcelain Landscape Tile 3/4” (20mm) thick
- Joint ranges may vary 1/8”-1/4” (2.5mm - 6.4mm) according to desired appearance
- Pedestal system (install as per manufacturer)
- Waterproofing membrane (install as per membrane manufacturer’s specifications)
- All concrete surfaces must slope to appropriate drain
  (consult engineer for project specific engineering)

**NOTE:** Specific installation details may vary based on pedestal height, load-bearing requirements, safety standards and wind-lift. All roof top slab/pedestal installations must be engineered by a professional engineer.
**INSTALLATION GUIDE**

**PORCELAIN LANDSCAPE TILE**

**INTERLOCKING POLYETHYLENE FOAM BOARD (IPFB)**  
- COMPACTED GRANULAR BASE

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**NOTE:** Interlocking polyethylene foam board (IPFB) facilitates the rapid installation of porcelain paving slabs. Although foam board distributes load, it is important that the area below the board has good load bearing capacity and provides sufficient drainage to keep the area below free of any frost movement or settlement. IPFB's must have manufactured drainage holes.

Only use IPFB's manufactured for paving applications. DO NOT use for vehicular applications.

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**NOTE:** Interlocking polyethylene foam board - max 1/8" (2.5mm high) - see photo

Polymeric jointing sand or Unilock EasyPro™ Jointing Compound

Unilock Porcelain Landscape Tile 3/4" (20mm) thick

Interlocking polyethylene foam board 3/4" (20mm) thick

1" (25mm) thick bedding course (screeded) of coarse sand

8" - 12" (200mm - 300mm) of 3/4" (20mm) crushed gravel

Geo-textile / geogrid

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Permeable Base Option: The compacted granular base may be substituted with 3/4" (20mm) clear stone (ASTM 57), in which case the bedding course will need to be 1" (25mm) of clear chip stone (ASTM NO.8 or 9).

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Low profile plastic edge restraint  
(anchored with rust-proof anchors)

Low profile spacer disk - max 1/8" (2.5mm high) - see photo

Unilock Porcelain Landscape Tile 3/4" (20mm) thick

Interlocking polyethylene foam board - 3/4" (20mm) thick

1" (25mm) thick bedding course (screeded) of coarse sand

8" - 12" (200mm - 300mm) compacted granular base  
3/4" (20mm) crushed gravel

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Low profile plastic edge restraint. Affix to foam board as per manufacturer's specification.

**Low profile spacer disk.**
**POOL COPING AND POOL DECK**

- Unilock Porcelain Landscape Tile 3/4" (20mm) thick
- 3/8" (10mm) joint with impervious polymeric jointing
- Sand or modified latex grout or polyurethane sealant/caulk (suitable for exterior horizontal surfaces)
- Modified mortar bedding using 1/4" - 3/8" (6mm - 9.5mm) notched trowel
- Two-level poured-in-place reinforced concrete slab 4" - 8" (100mm - 200mm) thick, 2% slope away from pool
- Locate control joints over tubular support footings
- Natural Stone or Unilock Ledgestone™ perimeter edger set into modified mortar scratch coat
- Concrete to metal (waterproof) adhesive (Apply as per manufacturer’s specifications)
- Side wall vinyl liner mount
- Metal pool wall (vinyl liner type)
- 8" (200mm) diameter tubular concrete support column front and back of concrete pad. Spacing to be determined by qualified professional and in accordance with ACL and PCA
- Compacted open graded granular backfill ASTM No. 8 or 9 or High Performance Bedding (HPB)
- Metal pool wall "X" frame support braces (Design may vary per manufacturer)
- Poured concrete pool wall foundation / stabilization (As per pool manufacturer’s specifications)