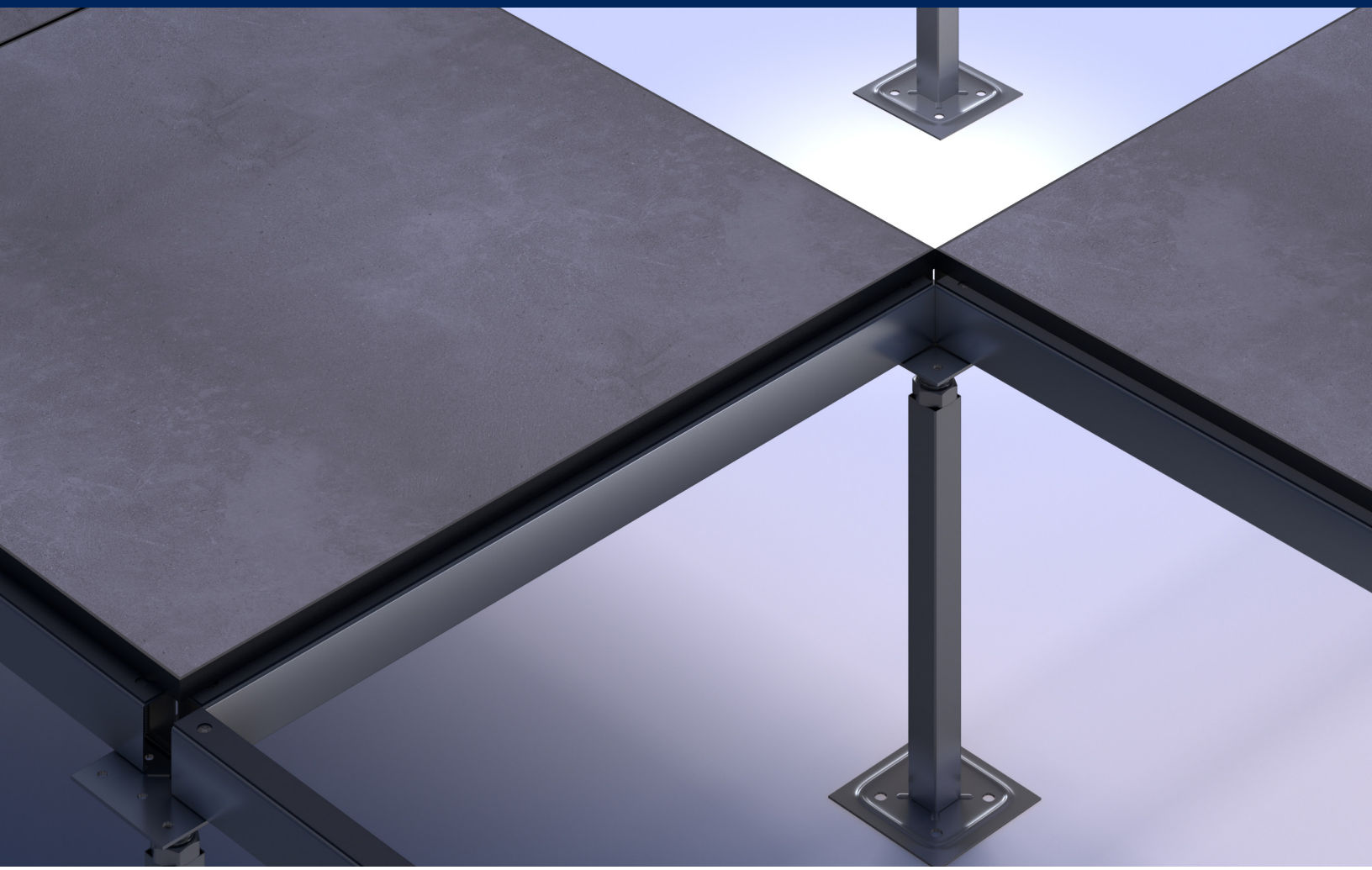
Porcelain Finishes Panel Installation Manual



Tate®

Table of Contents

Tate®


L110
L120
L120
L130
L130

Preparation

The installation of an access floor requires a thorough understanding and control of the building space receiving the access floor. Attendance at the pre-construction meeting is a must. Be sure your requirements are known and understood by the General Contractor and/or the Owner. This includes the following:

1. Drawings showing size and configuration of the access floor area.
2. Identification of material movement paths within the building. Plan your material paths from the trucks to the access floor area. Arrange for any special equipment needed. The customer must provide a dry, accessible area to receive and unload the material. There should be a free path from an elevator and/or hoists to the area receiving the access floor material.
3. Agreement on means of access to the area: elevator, stairs, street level, loading dock, etc.
4. Storage Conditions: Prior to start of installation, a dry, secure storage space must be made available for the access floor materials. The area to receive and store access floor materials shall be enclosed and maintained at ambient temperatures between 50º to 90º F and a minimum relative humidity of 20%.
5. Power available during installation (110 volt 20 amp supply, minimum requirement).
6. Work schedule of the other trades: All overhead work should be completed before the access floor is installed. The access floor must be protected immediately as the panels are installed. This can be done by covering the access floor with plastic and sheets of ½" thick plywood.
7. Installation Conditions: All areas of installation shall be enclosed and maintained at ambient temperature between 50º to 90º F and at relative humidity levels between 20% to 80%, and shall remain within these environmental limits 24 hours a day and 7 days per week. Product shall be allowed to acclimate to these conditions for 2 days prior to start of installation.
8. Identification of type and location of all equipment and services that will be on stands (for example: air handlers, power distribution units). Determine whether equipment will be installed before or after the access floor.
9. Upon the start of installation, the installation area should be free of other trades and their material and must have adequate lighting and power.
10. The subfloor surface must be free of moisture, dirt, grease, oil and other debris. Make certain the sealer is compatible with the pedestal adhesive. Test apply several pedestals as early as possible to be sure required bond can be achieved.
11. The condition of the subfloor should be checked before the start of installation to see if it is spalled, broken, or dug out. The General Contractor should float a skim coat of cement over areas that have these conditions. If these conditions are not corrected you may not be able to correctly adhere and level the pedestals.
12. Subfloors other than concrete: Be careful of wood subfloors, vibration isolation pads, or concrete floors with existing floor coverings. If you cannot avoid putting the access floor over one of these subfloors, you should conduct overturning moment tests to ensure that the pedestals adhered to them will meet the overturning moment specification.
13. Verify that the work conforms to the contract drawings and that the starting point is agreed upon prior to commencing work.

Installation

The installation of the access floor begins with the field area. There are certain steps that should be followed which are listed below in sequential order.

Step 1 – Verify Room Dimensions Against Drawings and Check Subfloor for Grade Variations
Check the room dimensions against approved drawings to ensure there are no inconsistencies. Determine the exact finished floor height by locating the benchmark set by the General Contractor. This could be a doorsill, curb, or a reference point marked on some structure such as a column.

Utilizing a laser with targets, verify that the subfloor is within specifications. The laser will give a constant level line to use as a reference. (Lasers with targets designed for access floor installation are recommended, however a transit may be used instead.)

If the planned access floor elevation must be changed in order to meet the bottom of the door buck or some other fixed structure, verify that the pedestals are of the necessary height to make this change. NOTE: Pedestals have limited adjustment range and the minimum stud-to-tube engagements must be maintained.

Step 2 – Identify and Check the Starting Point
The architectural drawings should indicate the starting point for the access floor installation designated by the Architect, Engineer, or General Contractor. Ideally, where full panels will be installed against two walls the starting point would be located at a corner where two walls meet to minimize the amount of cut panels.

Permission to relocate the starting point will be needed if the following conditions exist:

- Objects on the subfloor which prevent pedestal placement cannot be circumvented.
- The planned starting walls are crooked or out of square, preventing installation of full panels.
- The planned starting point will require excessive cutting of perimeter panels.

Step 3 – Establish Control Lines from Starting Point
The control lines are used to check for out-of-square or "wavy" wall conditions, as well as act as a guide for ensuring perpendicularity. Once the starting point is established, use chalk to lay out two perpendicular control lines from the starting point (see Figure #1, control lines 'A' and 'B'). These will be the control lines for installing the access floor. They may be laid out with a tape measure (using the Dimension Table in Figure #1 to verify perpendicularity) or with a laser that can shoot a right angle. For an exceptionally large floor, an electronic transit may be used to establish the control lines.

If the corner of the room is designated as the starting point, then the point should be located 24 inches or less from the two adjoining walls in the designated corner. With the lines drawn along the entire length of each wall, check at various points along each line to determine if the distance to the wall at any point is more than 24 inches. If this is the case, the entire control line should be moved closer to the wall so that no measurement between the control line and wall is greater than 24 inches or one full panel.

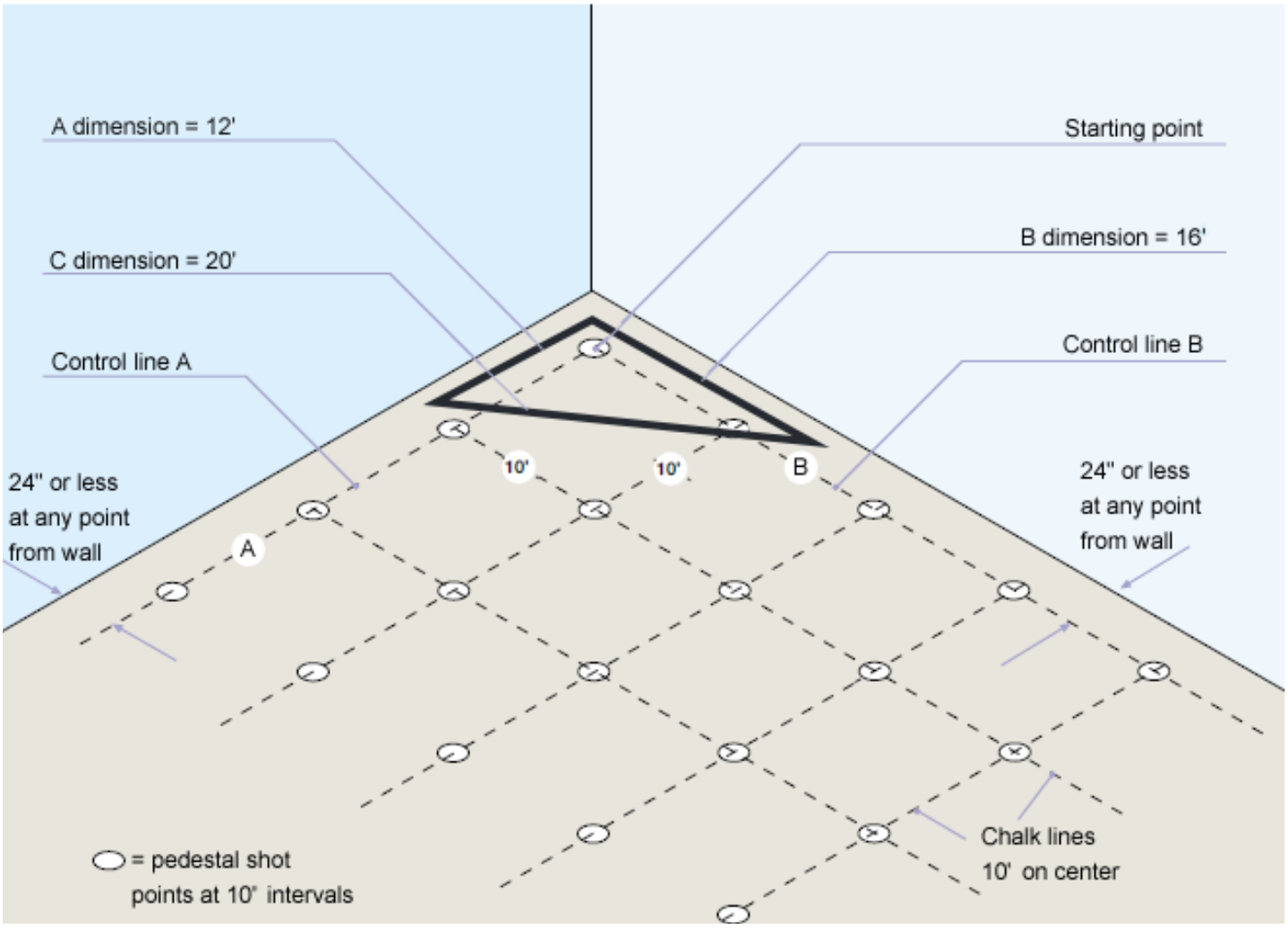
Step 4 – Spread Pedestals
Beginning 10 feet from the starting point, draw chalk lines perpendicular to each control line at 10 foot intervals. This will create a grid with lines 10 feet on-center (see Figure #1). Each point of intersection in the grid will serve as a pedestal shot point where exact pedestal height adjustments will be made with a laser or transit.

The pedestals placed at the shot points will be used to make the height adjustments for all other pedestals (with the aid of a 10-foot leveling bar). Once the lines are drawn, place all pedestals in their approximate locations. Only the shot point pedestals need to be exactly located at this point.

As mentioned in Steps 3 and 4, Figure 1 illustrates how an installer establishes control lines from the designated starting point. Maintaining a distance of 24" or less from the wall, the control lines are used to check for wall squareness and to serve as a guide for the establishment of pedestal shot points at 10 foot on-center intervals.

Use the dimension table below as a guide for verifying perpendicularity of the control lines.

Figure 1: Laying control lines



Dimension table: To verify perpendicularity when laying out control lines with a tape measure								
A			B			C		
3′	6′	12′	4′	8′	16′	5′	10′	20′
Example: If the "A" dimension is 12′ and the "B" dimension is 16′, then the "C" dimension should be 20′								

Step 5 – Level Pedestals in Proper Position

Using a laser, shoot in a pedestal assembly to the proper elevation at every chalk line intersection. Once the pedestals at the intersections are adjusted to the proper elevation, the 10-foot leveling bar will be used to position and set the height of the pedestals in between (see Figure #2).

Example of Laser Level

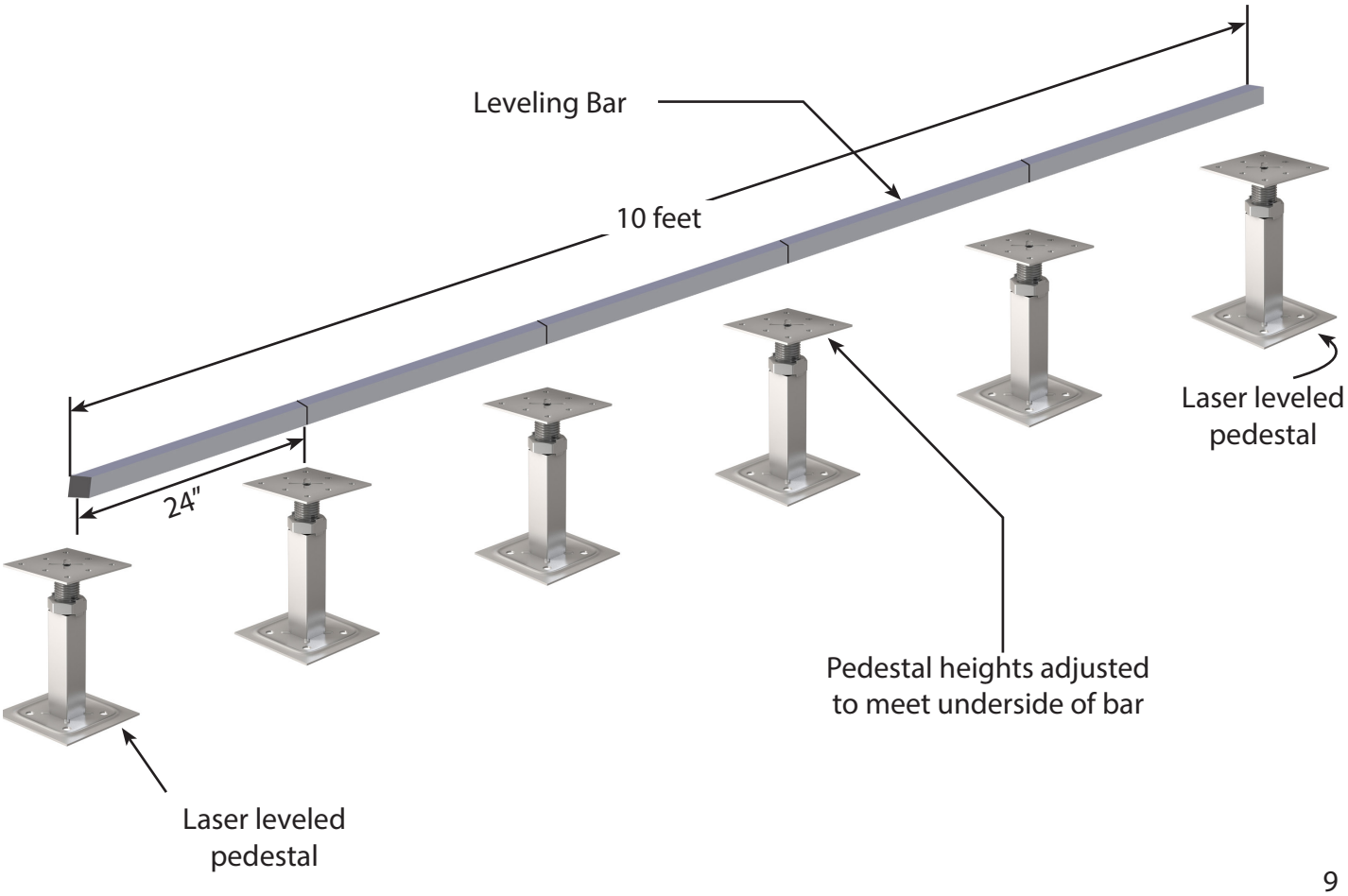
The leveling bar should meet the following requirements: extruded aluminum; nominal width and height dimensions of 1-½" x 3"; straight (without a bow in any direction); marked every 24". To set the height of the remaining pedestals: position the leveling bar so that it spans the pedestals that were adjusted according to the laser – then adjust the height of the four pedestals under the bar to meet the bottom of it (at 24" intervals).

Care must be taken to ensure that all of the pedestal heads touch the bottom of the bar without raising it. Doing this correctly will create a level access floor with panels that do not 'rock' in the system. Remember that the finished access floor must be level within 1/16" in 10 feet of length and 1/8" overall.

After there are two parallel rows (of six pedestals) 10 feet apart, turn the leveling bar 90 degrees to position pedestals between the two rows. Use the bar to position and adjust the pedestals in between the rows until you have an entire 10' by 10' section with pedestals on 2-foot centers.

Repeat this sequence for each 10' by 10' section.

Figure 2: Leveling pedestals with the leveling bar



Step 6 – Attach Pedestals to the Subfloor with Adhesive
Glue each pedestal base that has been set in place and leveled. Using a spatula type device, tilt the base plate without changing its location and apply adhesive to the bottom of the base plate (see Figure #3). As you apply the adhesive, scrape the spatula against the base plate to remove all adhesive from the spatula. The adhesive should be oozing from under the base on at least three sides. This will give full adhesive coverage to the bottom of the base plate.

There is approximately 60 minutes of adjustment time before the AIM 382 adhesive begins to set and 25 minutes for Seal Bond 95. The pedestal adhesive must still be wet when installing stringers and panels so that the stringer grid can be straightened and squared throughout the installation process.

Panels should be laid within 30 minutes after pedestal adhesive is applied. Do not glue the pedestals down too far ahead of the panels. The placement of the panels will determine the exact pedestal locations. It is best to install a 5x5 panel section at a time, working along the longest wall first. (See 'L' Section)

When installing mechanical anchors, you should install the entire floor by first attaching the pedestals with adhesive. This gives the opportunity to make final adjustments to the position of the pedestals before they are bolted down. After the panels have been installed and all pedestal adjustments have been made, every other row of panels needs to be removed to access the pedestals for anchor installation.

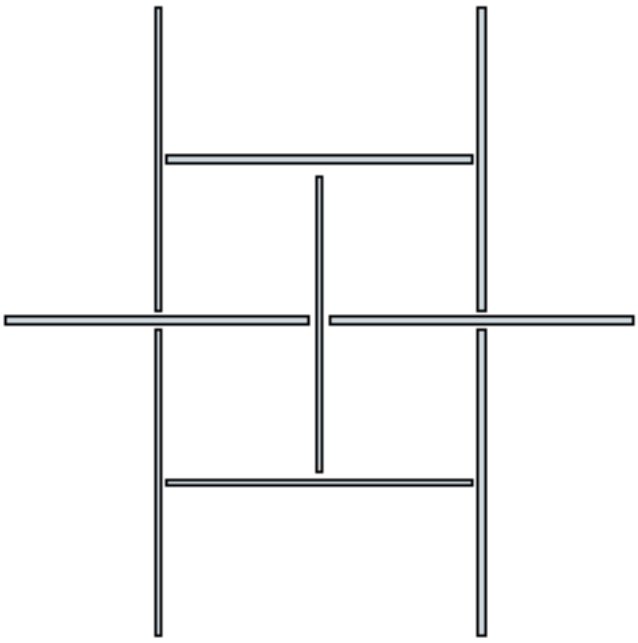
Figure 3: Applying Adhesive
An adhesive spatula can be any tool that allows for the placement of the adhesive. A flat metal tool of 3" wide or so is typically used to apply the adhesive to 4"x4" base plates without disrupting the pedestal. Large spatulas are recommended for larger plates.

As mentioned above, the following steps of installation will need to be understood before proceeding. Pedestals, stringers, and panels all need to be in place within the adhesive cure time to ensure that the final pedestal location adjustments can be made.

Step 7 – Installing Stringers

Attach stringers to the pedestal heads using a torque limiting screw gun. Set the torque to 30-inch pounds. Do not over-tighten the stringer screws as this can cause the sides of the stringers to spread out at the bottom. Do not under-torque as this can leave the system loose and make installing the panels more difficult, and adversely affect the electrical continuity of the grid. Stringers should be installed in 4'x4' basket weave configurations within the working field area.

4'x4'



4x4ft Basket Weave Configuration

Example of stringer configuration

Step 8 – Creating the 'L' Section

To create a square floor, you need to create a section of that is shaped like an 'L' (see Figure #5), which will be used like a giant square for installing the rest of the panels in the room. Correctly installing this section is essential to the creation of a straight floor where panels do not rock and where panels are easily removed and replaced.

Creating the long leg of the 'L' section

Begin laying in panels at the starting point – lay five rows of panels along the longer wall, making sure that the pedestals nearest to the wall stay on the control lines. (The length of the leg is built up by laying five panel-wide segments – end-to-end – along the wall.) Once the leg is fully installed, you need to verify that it is straight by installing a dry line (see How to Install a Dry Line below) or by using a laser line on top of the access floor.

Creating the short leg of the 'L' section

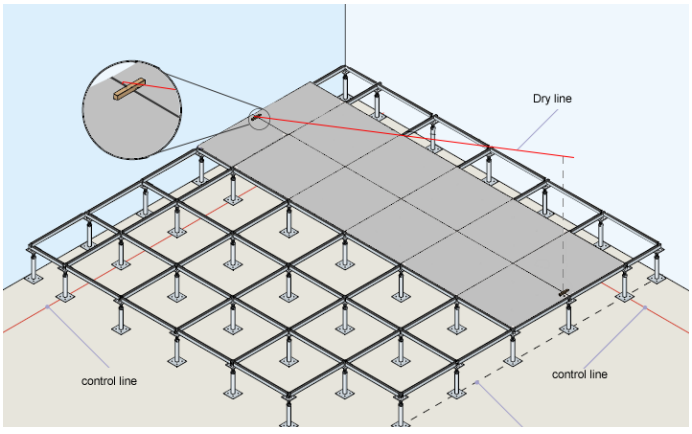
After installing the long leg of the 'L', the chalk control line along the short wall needs to be kept intact until the short leg is installed. Remember that the 'L' section of the floor dictates the squareness of the rest of the floor. However, it is still possible (particularly in a long room) for a curve to develop in small increments in the grid. Therefore, a laser line or dry line should be kept stretched along the short wall until at least a five-panel-wide section of the floor is installed along its entire length (see Figure #5, Point B for exact location). Lay five rows of panels along the short wall, perpendicular to the long wall. Follow the previous steps for laying panels and use a dry line or laser to stay on the control lines. After laying the complete 'L' section, check to be sure it is square.

Install five rows of panels inside of the 'L' along either leg (see Figure #5). The leg you choose to build upon will often depend upon immediate availability of an area or the absence of obstructions. You will continue to build upon the 'L' in sections that are five panels wide until it is filled in. While you are laying panels in the first section inside of the 'L', you should have someone spreading, leveling and preparing the adjacent section for panels.

How to Install a Dry Line

Near your starting point, tie a dry line to a pedestal at the wall and bring it to the floor surface between two panels (Figure #4 shows this between the second and third row). Wrap the line over a spacer and run it the entire length of the leg and attach it to the corresponding pedestal at the other end – in the same manner that it is attached at the point of origin (with a spacer at the top). The seam between the second and third rows of panels should be directly below the dry line. Repeat this step in the other direction after you have created the long leg of the 'L' section.

Figure 4: Installing a Dry Line



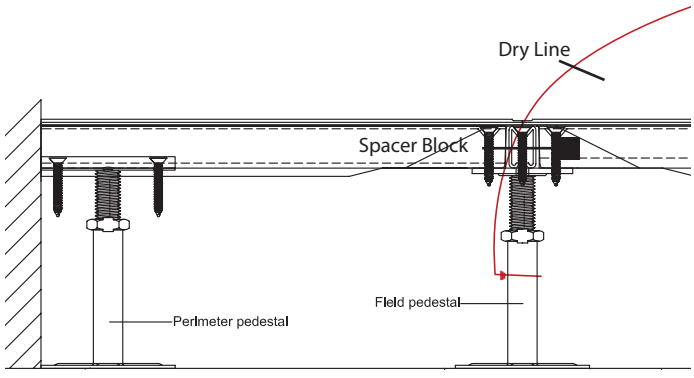
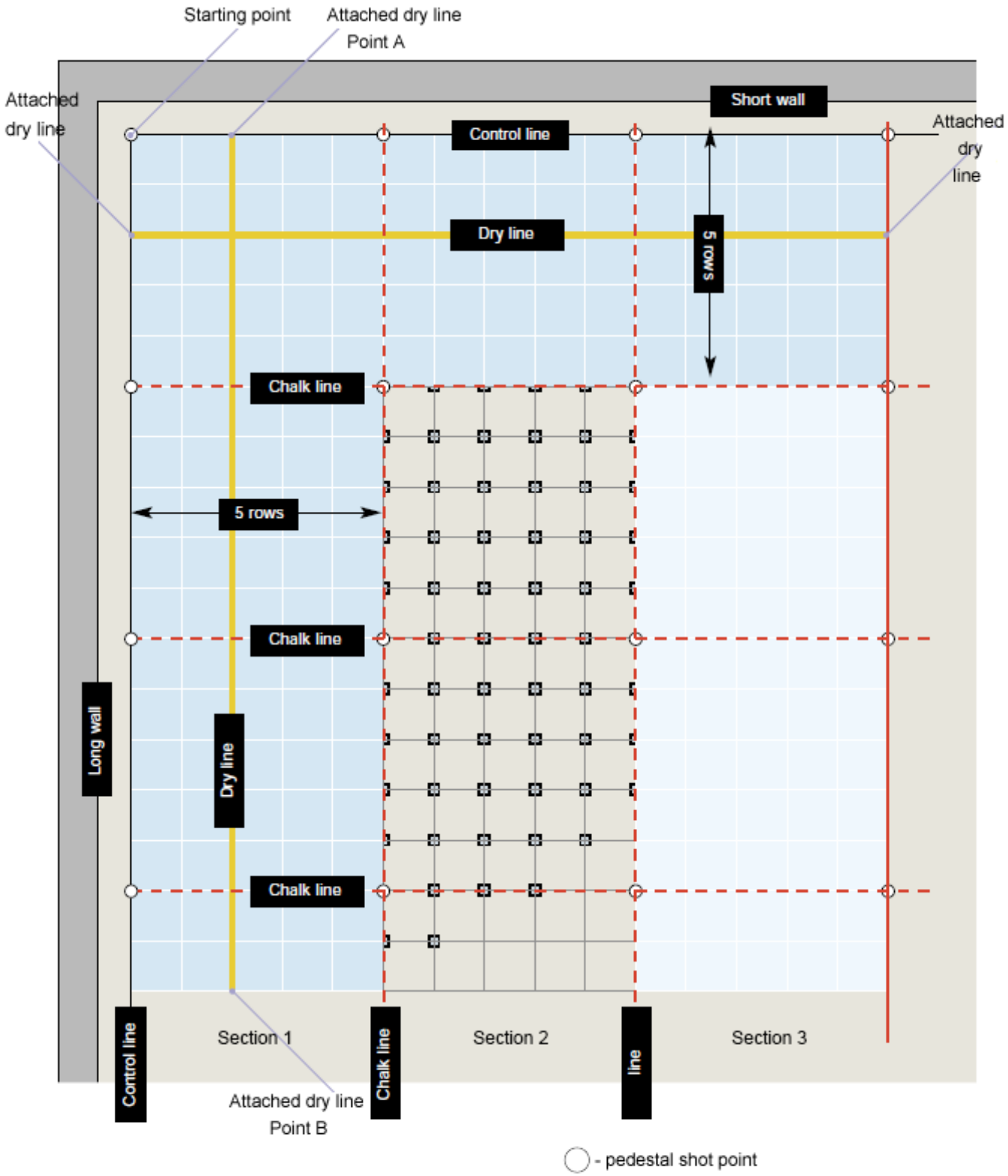


Figure 5: Creating the 'L' Section



Step 9 – Installing Panels

The porcelain access floor panels are installed on Tate's bolted stringer system. To install the panel, carefully lower the panel into the grid - resting the lip of the panel on the top of the bolted stringer.

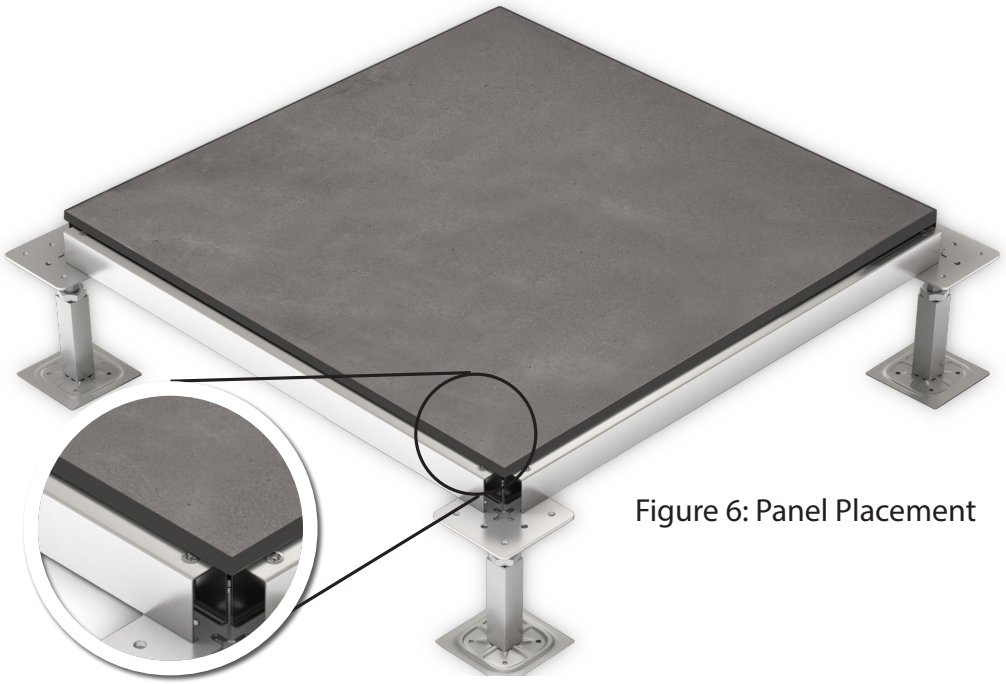


Figure 6: Panel Placement

Step 10 – Installing Pedestals, Stringers and Panels at the Perimeter

1. Perimeter panels are installed after the field is in place and is square.
2. Perimeter panels should be measured and cut to fit at each location taking into consideration that walls may be wavy or out of square. Measurements should be made twice to ensure that panels are cut tight to the wall or curb. When making complex cuts we recommend the use of cardboard panel templates before cutting actual panels.
3. The edges of perimeter panels cut to walls, columns and curbs can be beveled from the top to make panel removal and installation easier. A 5 degree bevel cut is adequate.
4. There will be no stringers parallel to and against the wall. The stringers that run perpendicular to the wall must be attached to the perimeter pedestals with stringer screws.
5. With the perimeter pedestals abutting the walls, two stringer screws are screwed partly into the perimeter head so they engage the groove at the underside of the stringer running to the wall as shown in Figures 7B and 8A. The screws can be sufficiently tightened at their undersides by hand once the stringer is attached.

Figure 7A: Perimeter Pedestal

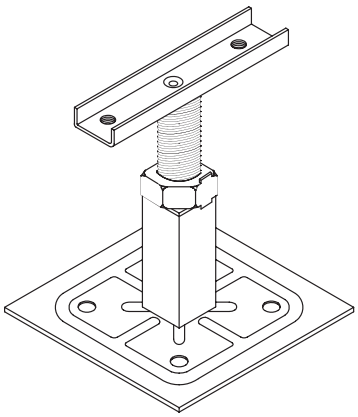
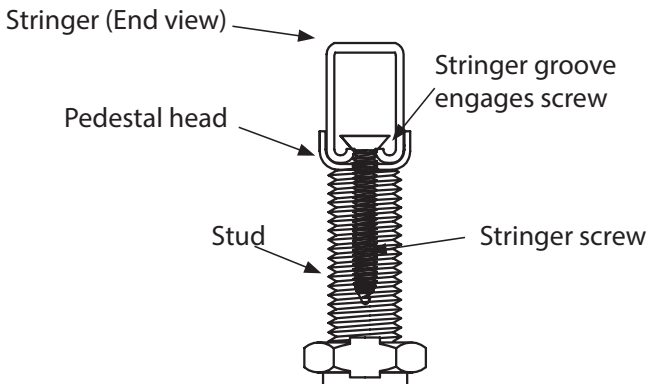


Figure 7B: Perimeter Pedestal with Stringer



As shown in Figure 8, the stringers perpendicular to the wall should extend to the wall surface to provide support for perimeter panels.

Figure 8A: Side View of Perimeter

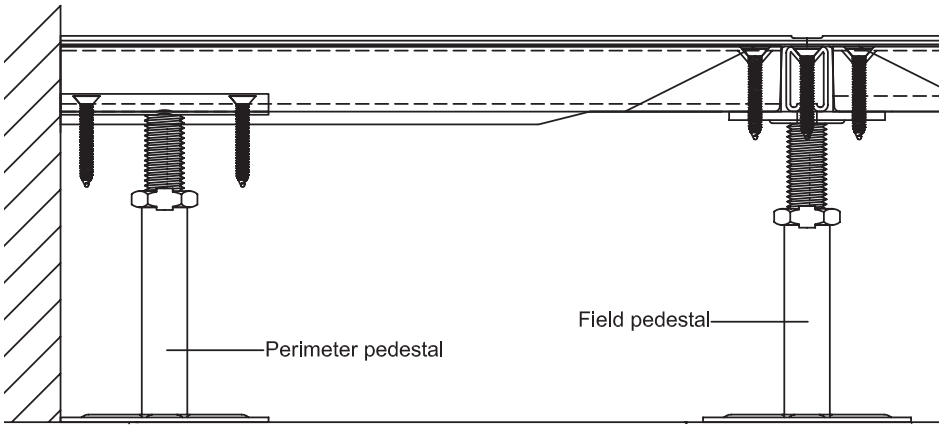
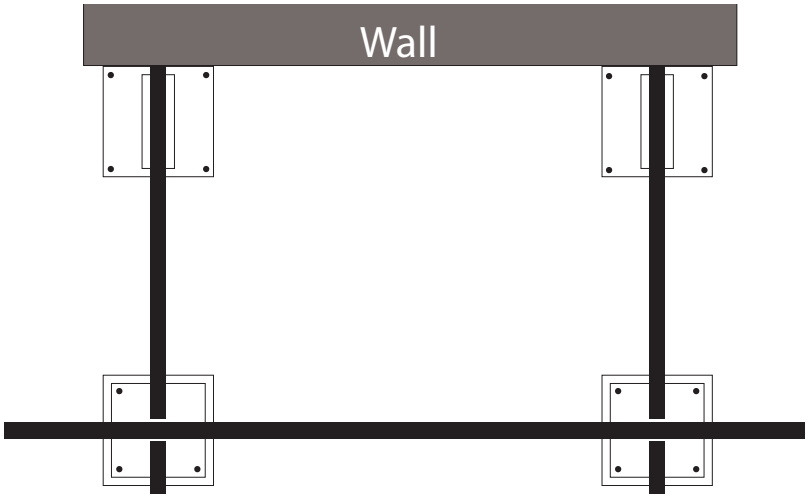


Figure 8B: Top View of Perimeter



Cutting Safety

All governing organizational safety standards must be followed and practiced at all times. Proper Personal protection equipment should be worn during the cutting process. Tate recommends the following personal protection equipment be utilized; however, this is not an all encompassing list for every situation.

Personal Protection Equipment

- Safety glasses
- Ear plugs / muffs
- Steel toe safety boots with aggressive slip resistant tread
- NIOSH approved face mask
- Snug, flexible safety gloves

Equipment Needs

- All cutting equipment guards and shields be in place
- Ground Fault Interrupter System

Cutting Tools

Panels with porcelain tile can be cut in either of the following ways:

1. Cut through the tile down to the surface of the ConCore panel using a circular saw or grinder then cut through the panel using a band saw with bi-metal blade.
2. Simultaneously cut through the tile and the ConCore panel using a band saw with carbide grit blade.

Cutting through the tile and panel with a band saw with carbide grit blade will be a slower operation however it may be necessary to do when making curved cuts or when cutting inside corners in panels.

Recommended Circular Saws, Grinder and Blades for Cutting through Porcelain Tile:

- Table saw for straight cuts through porcelain tile: IMER Combi 250VA 10 inch Tile & Stone Saw
  http://www.imerusa.com/saws_TPSS.htm
- Blade for IMER saw: Pearl Wet Porcelain Blade
  http://pearlabrasive.com/Pages/ItemClass_Catalog.aspx?search_val=porcelain&search_type=Product&-class=&advanced=0

Hand held circular saw for curved or straight cuts through porcelain tile:

- Makita 12V max CXT™ Lithium-Ion Cordless Tile/Glass Saw Kit (CC02R1) with 3-3/8" blade
  https://www.makitatools.com/products/details/CC02R1
- Blade for Makita saw: Makita 3-3/8" Wet/Dry Diamond Blade
  https://www.makitatools.com/products/details/724950-8D

Angle grinder for curved cuts through porcelain tile:

- Hilti AG 450-7D angle grinder with 4.5" disc. (The grinder is also useful for making inside corner cuts in the tile and panel.)
  https://www.hilti.com/cutting,-sawing-&-grinding/cutting-&-grinding/angle-grinder/r2328133
- Blade for Hilti Angle Grinder: F Series Granite Turbo Blade / DTB-F- by A.Bottini Enterprises Inc.
  https://abottini.com/collections/diamond-blades/products/f-series-granite-turbo-blades

Recommended Saws and Blades for Cutting Panels and Understructure:

Saws:

- Mobile Applications Model MA-615 Band Saw
- Wilton Model 8201 Band Saw
- DeWalt 331K Hand-held Jig Saw

Blade:

- Lennox Classic HSCO Bi-Metal M42 band saw M42 ¾"x.035" – 14 WS (This blade will not cut porcelain.)

Recommended Band Saw Blades for Cutting through both Panel and Tile:

- Lenox Master-Grit Carbide band saw blade ¾"x.032" – Gulleted - Course
- Lenox Master-Grit Carbide band saw blade ½"x.025" – Continuous - Medium
  http://www.lenoxtools.com/pages/master-grit-carbide-band-saw-blades.aspx

Factory-supplied Cutouts

Tate provides factory cutouts precisely made by water jet cutting and can provide panels with any size and shape of interior cut. Water jet cutting is the easiest and most efficient method of simultaneously cutting through the floor panel and the porcelain.

MA-615 Band Saw

Combicut 250 VA Circular Saw

Makita Wet Saw

Hilti 4.5″ Grinder

Pearl Porcelain Blade

F Series Granite Turbo Blades

Makita 3-⅜″ Diamond Blade

Lennox Master-Grit Carbide

Making Straight Cuts with a Circular Saw

1. Make straight cuts through the porcelain tile using a bridge saw such as the Combicut 250VA wet cutting tile & stone saw or a hand-held circular saw such as the Makita 12V CXT saw.
2. After cutting through the porcelain tile, cut through the ConCore panel is using a metal cutting band saw with a Bi-Metal blade.

Making Curved Cuts with a Hand-held Circular Saw or Grinder

1. To make slightly curved cuts through the porcelain tile use the Makita 12V CXT saw or the Hilti AG 450-7D angle grinder with 4.5" disc.
2. To make tight curves in panels use the Hilti angle grinder.
3. After cutting through the porcelain tile, cut through the ConCore panel is using a metal cutting band saw with a Bi-Metal 14 TPI ½" x .035" blade (or similar blade).

Creating and Inside Corner Cut in a Panel (Cutting a Panel into an "L" Shape)

1. You can use a carbide grit blade on your band saw to simultaneously cut through the tile and the panel. Note that this method of cutting is slower than using a circular saw.
2. If using a circular saw to cut through the porcelain tile you need to stop the cut before the blade cuts through the full depth of the tile then use a carbide grit blade on your band saw to complete the cut through the tile and the panel.

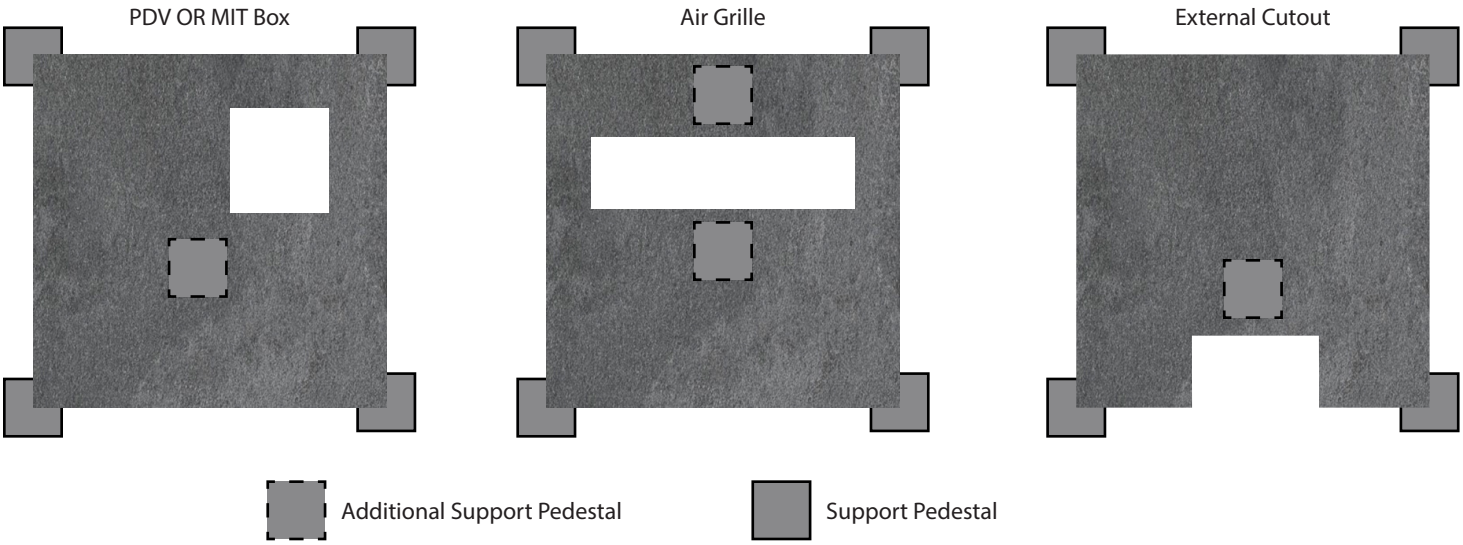
Minimizing Saw Blade Wear

1. Try to minimize cutting into the ConCore panels with your tile cutting saw to minimize dulling of your tile cutting blade.
2. Try to minimize cutting through the porcelain tile with your band saw to minimize dulling of your band saw blade.

Step 11 – Perimeter Panel Support

All panel cut outs (factory or field cut) must be reinforced with additional pedestals. Below are some examples of typical panel reinforcements. Tate recommends additional support for any opening that is greater that 3 inches.

Figure 9: Examples of Typical Panel with Additional Pedestal Support



Step 12 – Protecting the Floor from Damage

The Porcelain surface must be protected during the floor installation. The following steps should be taken:

1. Form an agreement with the general contractor in pre-job meetings on how the floor will be protected, when the protection will be applied, and what is required of other trades to maintain the protection.

2. Establish who is responsible for putting down the floor protection (GC preferred) and document the requirements in writing.

3. Verify that other trades are aware of the floor protection requirements and that they cannot remove any protection without permission, and that they are responsible for putting it back as it was originally applied.

The following materials are required to protect the finish of the Porcelain.

1. Plastic sheets taped to one another across the floor surface.

2. Sheets of 3⁄16" or ¼" thick Masonite or ½" thick plywood on top of the plastic taped together with duct tape.

Ramps and Steps

Ramps and steps to a Porcelain Finish access floor are built out of ConCore system components as described in Tate's Installation Manual for ConCore systems.

Installing Partitions on the Access Floor While Floor Protection is in Place

When partitions must be built on the access floor while the protection is in place the plywood or Masonite in the area of the partitions is temporarily removed but the plastic remains in place to keep dirt and construction debris off of the Porcelain Finish. The partition track can be secured on top of the plastic sheeting. After the partitions are installed any dirt and debris should be removed from the plastic and the plywood recut to fit against the partitions.

Removing Protection

Once all construction work is complete and construction materials are no longer being rolled across the floor by other trades the protection can be removed. Any plastic sheeting trapped under partitions should be carefully cut away and folded back in sections to contain dirt and debris.

Step 13 – Cleaning the Floor

Tate's Porcelain finishes are designed for years of service with minimum maintenance. Adherence to the guidelines below allows maximum life to be obtained from this tile. The panels should not be exposed to construction traffic and must be protected just as any finished floor coverings.

Tate's porcelain panels are designed for years of service with minimum maintenance. Adherence to the guidelines below allows maximum life to be obtained from this tile. The panels should not be exposed to construction traffic and must be protected just as any finished floor coverings.

Do:

1. Provide protection from sand and chemicals tracked in on shoes by providing "walk- off mats" at entrances.
2. Rotate panels in high-use areas to areas of low traffic to spread years of wear over the entire system.
3. Use felt furniture glides designed for hard surface finishes. Metal or plastic glides designed for carpet should not be used on porcelain flooring.
4. Use chair mats under casters. Casters should be soft rubber and designed for hard surface finishes
5. Keep the floor clean by light damp-mopping with a mild multi-purpose floor cleaner or mild detergent.

Don't:

1. Flood the floor or use anything other than a damp mop.
2. Use strong abrasives, steel wool, nylon pads or scrapers to remove stains.
3. Use wax and/or similar products
4. Use cleaners which contain hydrofluoric acid, a very aggressive agent that should never be used. Cleaners containing hydrofluoric acid attack ceramic materials even if strongly diluted
5. Drag or slide furniture or equipment across the floor without the use of glides.

Cleaning Procedures:

Initial care can be carried out with a damp microfiber mop or a buffing machine. For either option, the first step is to sweep and vacuum any loose dust, dirt or debris from the floor. It is important not use excessive water or flood the floor. Water may not pool on the floor or seep between the seams of the panels.

Microfiber floor mop

Microfiber floor mop

Use a slightly damp mop with a high proportion of microfibers (at least 50%). For lightly textured floor tiles, use a deep-pile microfiber mop. If desired, add a small amount of mild detergent or vinegar to the water. Make sure that the cleaning product is suitable for un-glazed floor tiles.

http://www.uline.com/BL_8823/Microfiber-Wet-Mops

Buffing machines or auto scrubbers

For more tenacious dirt, spray a fine mist of cleaning solution on the floor and polish with a red or blue pad or dry buff with a white scrubbing pad suitable for use on unglazed floor tiles. Make sure that the cleaning product is suitable for unglazed floor tiles. Minimal water should be used. Auto scrubbers may only be used if the water does not seep between the seams of the panels and does not pool on the floor. Once cleaning is completed, isolate the cleaned floor until it has completely dried.


Auto Scrubber

http://www.cleanfreak.com/equipment/floor/buffers/17-inch-rotary-floor-buffer.html

Regular Maintenance

Regular vacuuming or wiping prevents the accumulation of dust and dirt. The floor will need to be cleaned regularly to remove more tenacious dirt. Prior to cleaning, first remove loose dirt by vacuuming or sweeping. Use a slightly damp mop with a high proportion of microfibers (at least 50%). For lightly textured floor tiles, use a deep-pile microfiber mop. If desired, add a small amount of mild detergent or vinegar to the water. Make sure that the cleaning product is suitable for unglazed floor tiles.


Scrubber Drier Machine

Tate®

Corporate Headquarters:
7001 Columbia Gateway Drive Suite 500,
Columbia, MD 21046
Tel: +1 410 799 4200

A Kingspan Group Company

Kingspan

LRQA CERTIFIED ISO 9001

LRQA CERTIFIED

EPA GREEN POWER PARTNER

www.tateinc.com

For more information please contact Tate, Inc. T:410-799-4200 / E: info@tateinc.com

Rev Date 8/15/2025
Copyright - 8//2025
ECN 16439