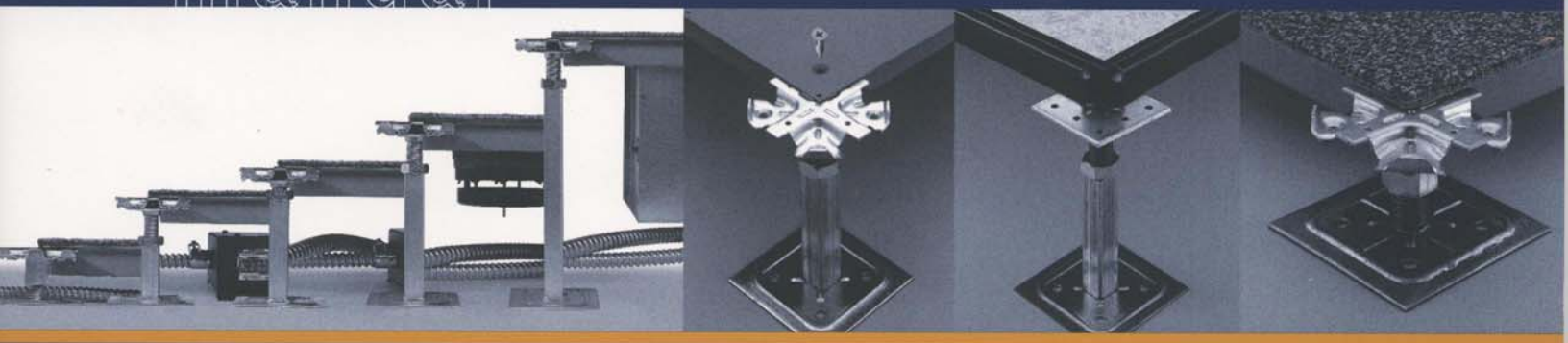
ACCESS FLOOR

INSTALLATION manual



OFFICES AND DATA CENTERS

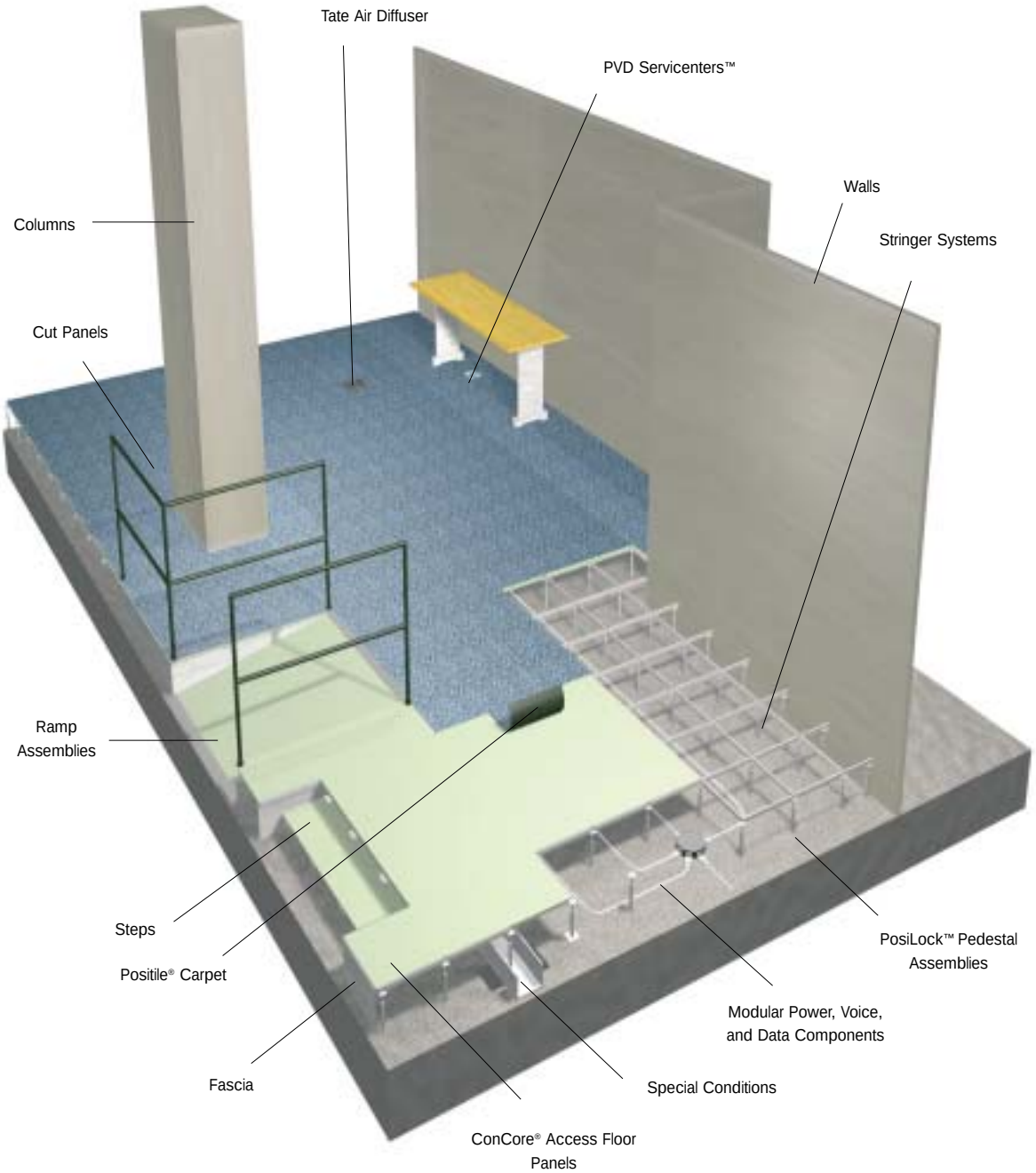
Tate
Access Floors

Introduction

The procedures outlined on the following pages will help you install Tate access floor products for office and equipment room applications. Typically, equipment room applications require access floor panels supported by an understructure system using stringers, where office installations may not.

At the beginning of each section, you will find an illustration with the area to be explained highlighted.

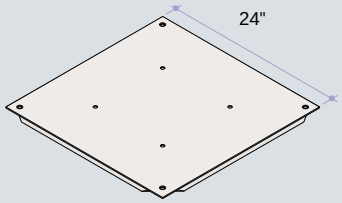
If you have never installed a Tate access floor system before now, please begin by reviewing the common component illustrations on the following pages. The illustrations will help you identify the components of the system you are about to install.



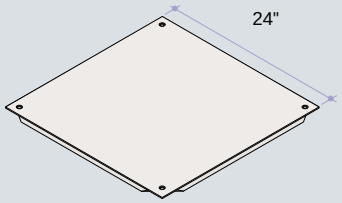
Introduction

COMMON COMPONENTS

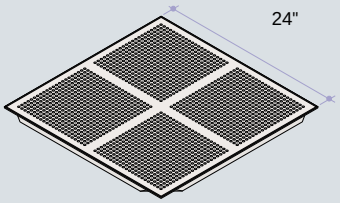
Access Floor Panels



ConCore® panel with holes for PosiTile™

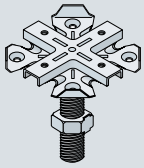


All Steel panel

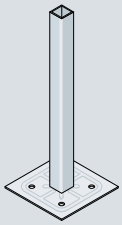


Perforated panel

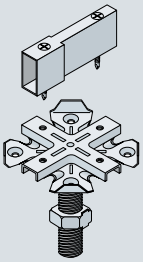
Standard Height PosiLock™



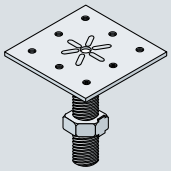
Field head



Field/perimeter/corner base

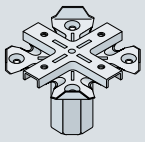


Perimeter head

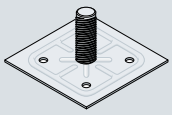


Inside/outside corner head

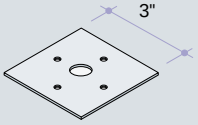
Low Finish Floor Height (FFH) PosiLock™



Field head

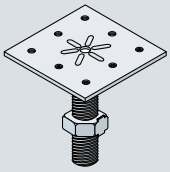


Field/perimeter/corner base

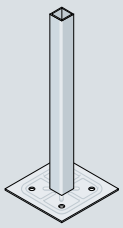


Perimeter head

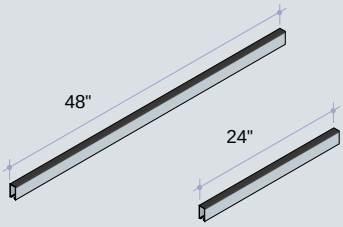
Bolted Stringer System



Field/perimeter/corner head



Field/perimeter/corner base



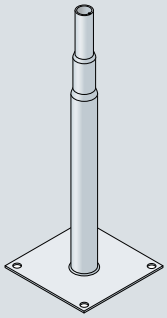
Stringers

Note: Product dimensions (i.e. tube length, threaded rod) will vary depending on project specifications

Introduction

COMMON COMPONENTS

Seismic Pedestal

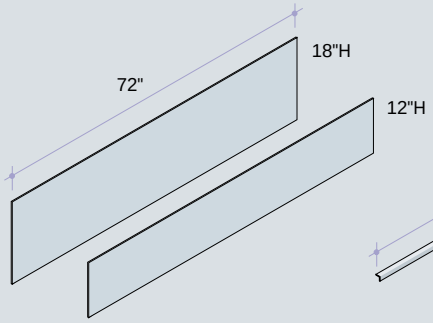


Type 6A

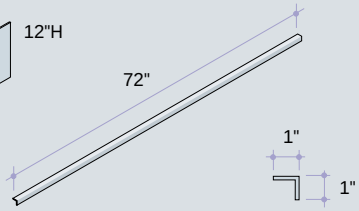
Sizes available: Type 1
Type 2A
Type 3A

Consult technical services for proper usage of all pedestal styles for seismic conditions

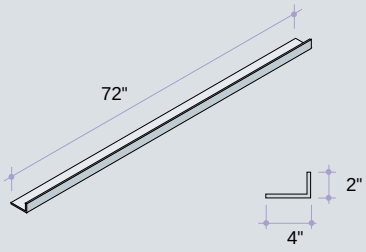
Fascia Components



Fascia plates (typical sizes)

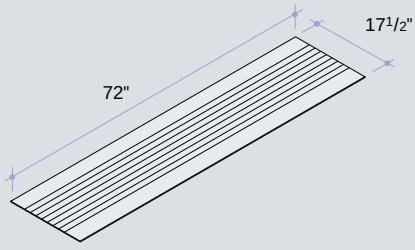


Fascia top trim angle

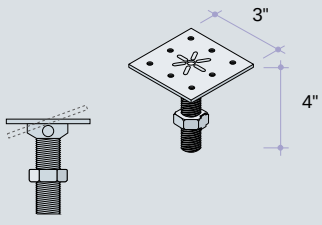


Fascia bottom angle

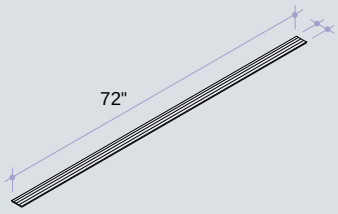
Ramp Components



Ramp shoe assembly



Ramp swivel pedestal head



Ramp threshold

Note: Product dimensions (i.e. tube length, threaded rod) will vary depending on project specifications

Tate ACCESS FLOORS

Introduction

GLOSSARY

A/F
Access Floor including panels, pedestals and accessories.

B/M
Bill of Material.

C/L
Center Line.

Dry Line
A string line (with no chalk on it) on top of the access floor used as a temporary reference line.

ELL
Sections of access floor laid along perpendicular control lines forming an 'L' shape, normally 5 panels wide.

FFH
Finished Floor Height. Dimension measured from the subfloor surface to the top surface of the access floor panel.

Field
The main open floor area where full floor panels are installed. Does not include perimeter panels.

Grid Line
Lines formed where the panels join together.

Laser
Electronic transit.

Leveling Bar
A straight edge having permanent 2-foot center marks used for leveling of pedestals. It is usually made from a rectangular aluminum tube with the following dimension: width 3/4" to 1"; height 2 1/2" to 4"; wall thickness .080" to .125"; length 8 to 10 ft.

Plumb
90 degrees from horizontal level.

Rocker
A panel that rocks up and down diagonally when installed.

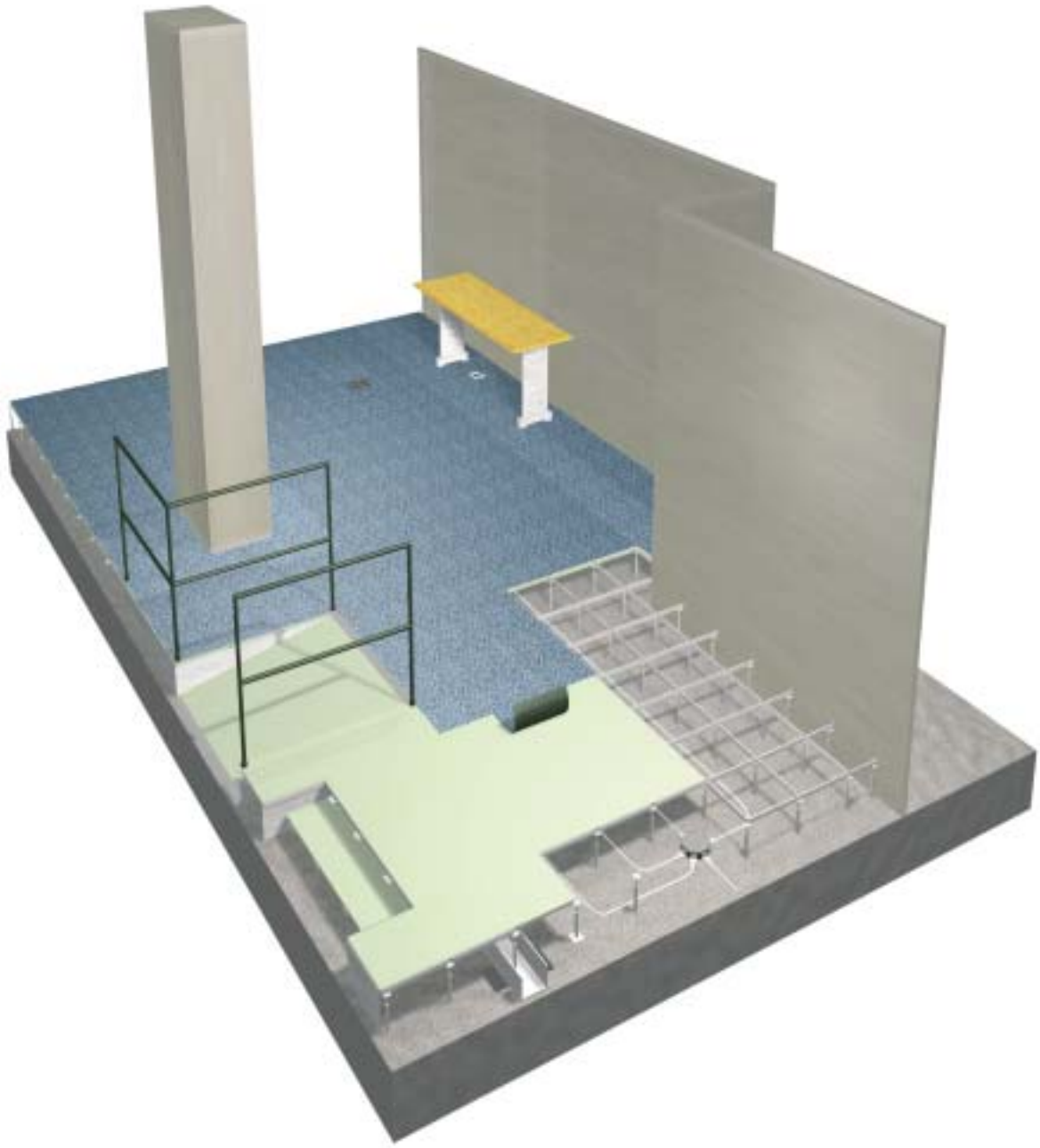
Shoot In (Sight In)
Establish elevation reference points in any given area by using a transit or laser.

Spreading
To spread understructure components throughout an area by placing the pedestal assemblies (without adhesive) on approximately 2-foot centers.

Starting Point
A specific location in the area which has been purposely designated as the best place to start the installation. Typically designated by the architect on architectural drawings.

Transit
Builder's optical leveling device used for establishing grade levels for floors, ceilings, etc.; for measuring horizontal angles.

Preparation



Tate ACCESS FLOORS

Preparation

LIST OF TOOLS

Caution: Adequately protect the A/F when moving gang boxes and bandsaws across finished surfaces by placing 3/4" plywood sheets on the floor.

Handbox

- (1) 10-foot tape measure (min. length)
- (1) 16-foot steel tape measure
- (1) 20-oz. claw hammer with steel handle
- (1) Centerpunch
- (1) Countersink
- (1) Screwdrivers (2 Phillips & 2 Standard)
- (1) 2-foot Hand Level
- (1) Pair of pliers/channel locks
- (1) Chalk line and chalk
- (1) Dry line
- (1) Pop rivet gun
- (1) Awl
- (1) Drill bit set 1/8" to 1/2"
- (1) Putty knife, 3" wide
- (1) Drill bits, 9/64"
- (1) Utility knife
- (1) Pair tin shears (good quality)
- (1) Double cup section panel lifter
- Marking pencils
- Rasp and metal files
- Screw gun tip bits
  (Standard and Phillips #2 & #3)

Safety items required

- Safety glasses
- Work gloves
- Ear plugs or ear muffs
- Steel toe safety shoes or boots
- Sleeve protectors
- Full-face shields

Power Tools

- Laser with target designed for access floor installation. (Recommendation: Spectra Precision 1485 HP with DBS)
- (1) Power drill 3/8"
- (1) Power drill 1/2"
- (1) Adjustable hammer drill 1/2"
- (1) Powder actuator (Hilti DX 350 or equiv.)
- (1) Set of powder actuator pins & shots
- (1) Bayonet saw and bi-metal blades
- (1) 10" Electric Miter box saw (optional)
- (1) 14" Metal-cutting bandsaw with cutting speed capability of 450 ft. per minute. (Recommendations: Rockwell Model 28-300 or MA615-Mobile Band Saw).
- (6) Bandsaw and reciprocating saw blades: Bi-metal, 14-tooth, 1/2" wide, .034" thick. This blade will cut: All Steel panels, ConCore® panels, Woodcore panels, stringers, pedestal heads and bases, fascia plate and other misc. items. For cutting aluminum, use bi-metal blade with 10 teeth per inch or circular non-ferrous metal cutting saw.
- (1) 25" pallet jack (Stratton or equivalent)
- (1) Leveling bar 10 ft.
- (1) Adjustable torque-limiting screw gun
- (1) 50-foot extension cords
- (2) 100-foot extension cords
- (1 each) 3", 4" and 5" metal cutting hole saws
- (1) Industrial Shop-Vac

Preparation

INSTALLER QUALIFICATIONS

Lead Man or Foreman

- Experience with successful access floor installations.
- Basic carpentry skills.
- Ability to use multiple measuring devices.
- Ability to read and understand architectural drawings and building specifications.
- Ability to operate building laser and/or electronic transit for control line layout and setting pedestal elevations.
- Ability to direct a minimum crew of 10 to efficiently install the access floor.
- Experience with asbestos handling.

Installers

- Experience with successful access floor installations.
- Ability to use multiple measuring devices.
- Ability to operate building laser and/or electronic transit for control line layout and setting pedestal elevations.
- Ability to read and understand architectural drawings and building specifications.
- Ability to install access floor and accessories with minimal supervision.
- Ability to use multiple power tools and cutting devices.

Helpers or Apprentices

- Ability to assist with installing access floor under supervision.
- Ability to unload trucks and experience with material handling.
- Experience with trash removal and clean up.

PRODUCTION RATES & CREW SIZES

Production Rates

The type of floor being installed and the conditions of the job site will affect production rates. Given favorable conditions, as described in this section, the approximate production rates shown *(table #1)* can be used as a guide.

Unloading Trucks

If an unloading dock is available, a 40-foot tractor trailer can typically be unloaded in two hours by using two pallet jacks. (Actual time for moving the material to the area receiving the A/F installation depends on the distance from the loading dock and on having a clear path to move the material).

Where an outside hoist or forklift is used because there is no loading dock, it may take four men four hours to unload a tractor trailer load of material.

Crew Size

The size of the crew is affected by various factors that are unique to each project:

- The speed of the installation required
- Availability of the installation area in conjunction with other trades
- Having continuous flow of work without interruptions in project construction schedule.

If the installation area is freely and continuously available without interruption by other trades and the schedule is not hurried to meet the project schedule, then the crew size(s) for effective production rates in a given room or area should be based on the square footages shown opposite *(table #2)*.

Preparation

Table 1: Production rates

Description	Approximate rate
Material handling, once material is stored in or adjacent to work area	5,000 ft^2 per man per day
Access Floor field area	400 ft^2 per man per day for a stringer system 460 ft^2 per man per day for a stringerless system
Perimeter cutting	100 linear ft. per man per day
Ramp assembly installation	1 each per man per day
Step assembly installation	2 each per man per day
Handrail (wall-mounted) installation	60 linear ft. per man per day
Handrail (floor-mounted) installation	24 linear ft. per man per day
Cutouts and trim installation	25 each per man per day
Fascia installation	100 linear ft. per man per day
Plenum divider installation	100 linear ft. per man per day

Table 2: Number of men by work classification

Square footage	Working foreman	Installer	Apprentice
Up to 1,000	1	1	0
1,001 to 3,000	1	1	1
3,001 to 5,000	1	1	2
5,001 to 10,000	1	2	2
10,001 to 20,000	1	3	4
20,001 to 40,000	1	4	6
40,001 and up	Split crews by sizes and sequences of areas to be installed, plus a general foreman if needed to coordinate several floors simultaneously.		

Preparation

JOB SITE 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 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. It should be closed to the weather and should be adjacent to the area where the floor will be installed.

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. If overhead work is done after access floor installation and the access floor is to be used as a work platform, then it must be adequately protected to prevent permanent damage. This can be done by placing 3/4" sheets of plywood on the access floor.

7. Installation Conditions: The installation area must be closed to the weather with the environment at 50 F to 90°F and 20%-80% relative humidity, 24 hours a day during and after installation. Tate recommends that the floor be installed as close to the normal operating environment as possible. Access floor materials must be stored in this environment at least 24 hours before the installation begins.

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. If a non-approved sealer (not one approved by Tate) has been applied to the subfloor, 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. *(see Appendix – Pedestal Overturning Moment Test).*

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 *(see Appendix – Pedestal Overturning Moment Test).*

13. Verify that the work conforms to the contract drawings and that the starting point is agreed upon prior to commencing work.

Preparation

JOB SITE PREPARATION (CONTINUED)

14. Notify other trades that no personnel other than experienced access floor installers should be allowed on the floor until the following conditions have been met:

- The perimeter is installed on at least three sides of the room.
- The pedestal adhesive has cured for a minimum of two days.
- The access floor (or a portion of) has been inspected and accepted by the General Contractor.

UNEVEN SUBFLOORS

Subfloors should be checked for uneven conditions with a laser before installation begins. Where low areas exist in the subfloor, the height adjustment range of the pedestals may not be enough to meet the FHH requirement. Longer bases may be required in low areas. The adjustment ranges of pedestals and the corresponding head to base engagement requirements are shown below.

You may be able to compensate for a slight to moderate subfloor irregularity under a pedestal with one of the following methods:

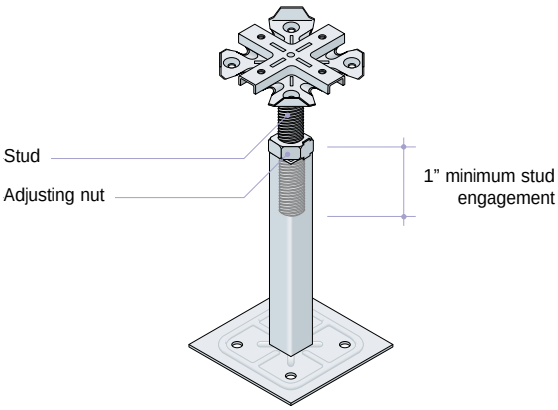
- **Slight condition**

Use pedestal adhesive to compensate for a slight subfloor irregularity under the base plate. If the subfloor is very rough, apply additional adhesive.

- **Moderate condition:**

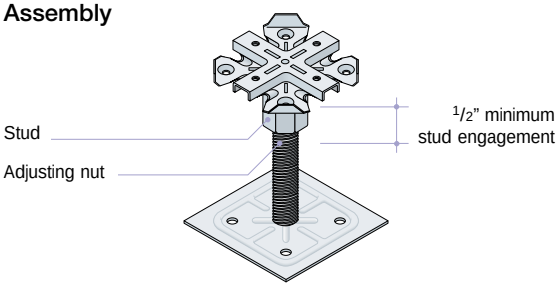
Use pedestal adhesive and a metal shim to compensate for a moderate irregularity under the base plate.

Figure 1: Standard Height Pedestal Assembly



Adjusting Range: 1" up and down

Figure 2: Low Finished Floor Height Pedestal Assembly



Adjusting Range: 1/2" up and down

Other adjustment ranges:

- PosiLock™ standard height pedestal assembly for 5" FFH: 3/4" up and down
- Stringer standard height pedestal assembly for 5" FFH: 1/2" up and down
- Stringer standard height pedestal assembly for 6" FFH: 3/4" up and down
- Stringer standard height pedestal assembly for floor heights 7" or higher: 1" up and down

Stud Lengths required per Floor Height		
PosiLock™ Systems:		
(a) 5" FFH: 3 1/2" stud	(b) 6" - 24" FFH: 4" stud	
For Low Finished Floor Height PosiLock Systems:		
(a) 2 1/2"" FFH: 1 1/2" stud	(b) 3" FFH: 2" stud	(c) 4" FFH: 3" stud
For Standard Bolted Stringer Systems: (for base Types 1-3):		
(a) 5" FFH: 3" stud	(b) 6" FFH: 3 1/2" stud	(c) 7" - 36" FFH: 4" stud
For Seismic Bolted Stringer Systems with Type 6 Base:		
(a) 12" - 36" FFH: 4 1/2" stud		

Installation
Field

Tate® ACCESS FLOORS

Installation
Field

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 FIELD DIMENSIONS VS. DRAWINGS AND CHECK SUBFLOOR FOR GRADE VARIATIONS

Check the room dimensions with approved drawings. Set up the laser to 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 a must. 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.

If the planned access floor elevation must be changed in order to meet the bottom of the door buck or some other fixed structure, you need to verify that the pedestals are of the necessary height to make this change. Keep in mind that the pedestals have limited adjustment ranges and that the minimum stud-to-tube engagements must be maintained. *(see Figures #1 and 2, on page 12 for the ranges and engagement requirement).*

STEP 2 – CHECK STARTING POINT

Find the starting point in the room as shown on the drawings. This point is usually determined by the Architect, Engineer, or General Contractor. If you find that by using the designated starting point the following conditions exist, ask for permission to move the starting point:

- Panels to be cut at the perimeter will be 5" wide or less, thereby requiring supplemental support.
- You will hit objects on the subfloor that could be circumvented.
- The planned starting walls are crooked or not square.

STEP 3 - ESTABLISH CONTROL LINES FROM STARTING POINT

Once the starting point is established, use chalk to lay out two perpendicular control lines from the starting point *(see Figure #3, 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 #3 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 from the two adjoining walls in the designated corner. The control lines will then be used to check for out-of-square or 'wavy' wall conditions. 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.

Installation
Field

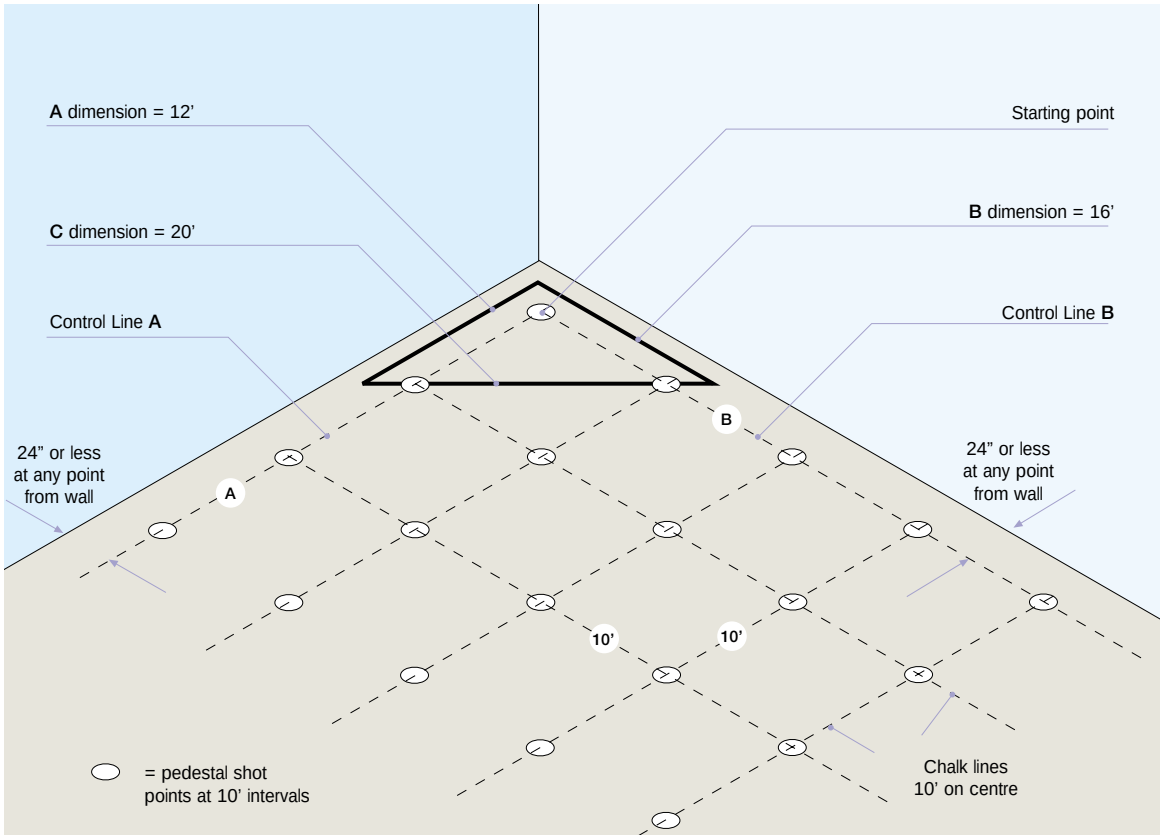


Figure 3: Laying out control lines

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’								

Installation
Field

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 #3)*. Each point of intersection in the grid will serve as a pedestal shot point (where exact pedestal elevations will be made with a laser or transit). The pedestals placed at the shot points will be used to set 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.

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 other pedestals *(see Figure #5).*

The leveling bar should meet the following requirements: extruded aluminum; nominal width and height dimensions of 1-1/2" 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 you have two parallel rows (of six pedestals) 10 feet apart, you will then turn your bar 90 degrees to position pedestals between the two rows. Use the bar to position and set the pedestals in between the rows until you have an entire 10' by 10' section with pedestals on two-foot centers. Repeat this sequence for each 10' by 10' section.

Figure 5: Leveling Pedestals with the Leveling Bar

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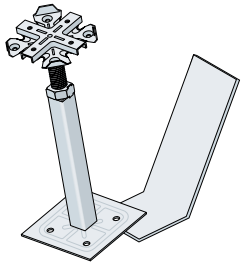
STEP 6 - ATTACH PEDESTALS TO THE SUBFLOOR WITH ADHESIVE

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 #4)*. As you apply the adhesive, scrape the spatula against the base plate to remove all the 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.

Figure 4



When installing mechanical anchors, you should install the entire floor by first attaching the pedestals with adhesive. This gives you the opportunity to make final adjustments to the position of the pedestals before they are permanently in place (you have approximately 60 minutes of adjustment time before the Aim 382 adhesive begins to set, and 25 minutes for Seal Bond 95).

After the panels have been installed and all pedestal adjustments have been made, you will have to remove every other row of panels to access the pedestals for anchor installation (see Appendix for anchor specifics).

Do not install the pedestals and stringers too far ahead of the panels. The placement of the panels will determine the exact pedestal locations. Panels should be laid within 30 minutes after pedestal adhesive is applied. Pedestal adhesive must still be wet when installing stringers and panels. You must ensure that the stringer grid is straight and square throughout the installation process.

- **For stringer systems only (see Figure #6)**

If stringers are a part of the system, attach them to the pedestal heads using a torque limiting screw gun. Set torque to 30-inch pounds. Do not over-tighten the stringer screws. This can cause the sides of the stringers to spread out at the bottom. Do not under-torque. This can leave the system loose and make installing the panels more difficult, and adversely affect the electrical continuity of the floor system.

- **For Posilock system**

If Posilock system is utilized, fasten panels to understructure as you go. Use a torque limiting screw gun and set the torque to 30 inch-lbs. Do not overtighten.

Figure 6a: Stringer System

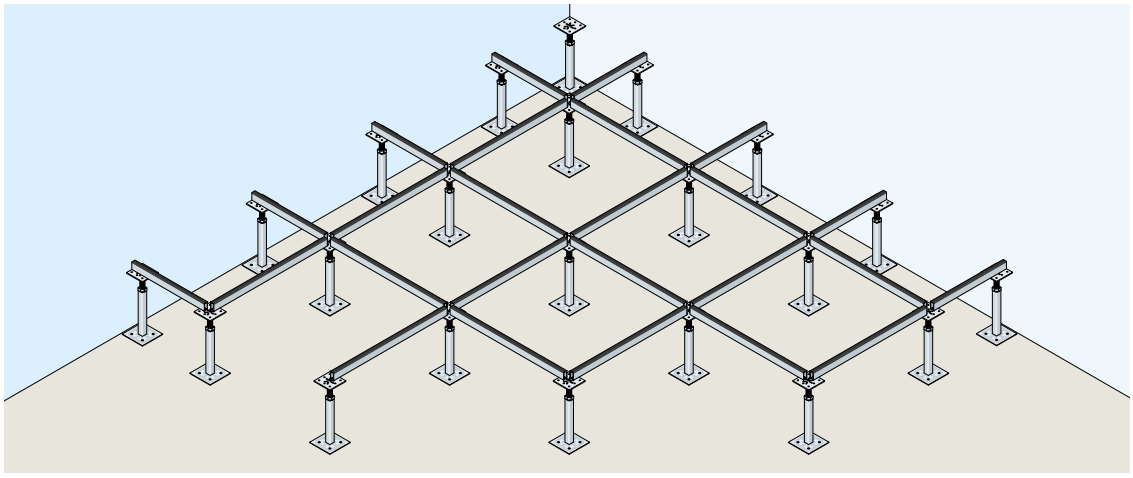


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Figure 6b: Stringer connection at wall
- see 'Stringer Systems' on page 26 for perimeter details

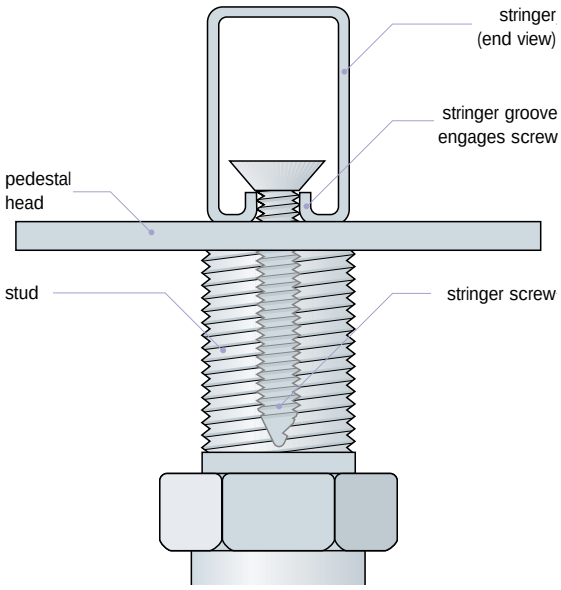
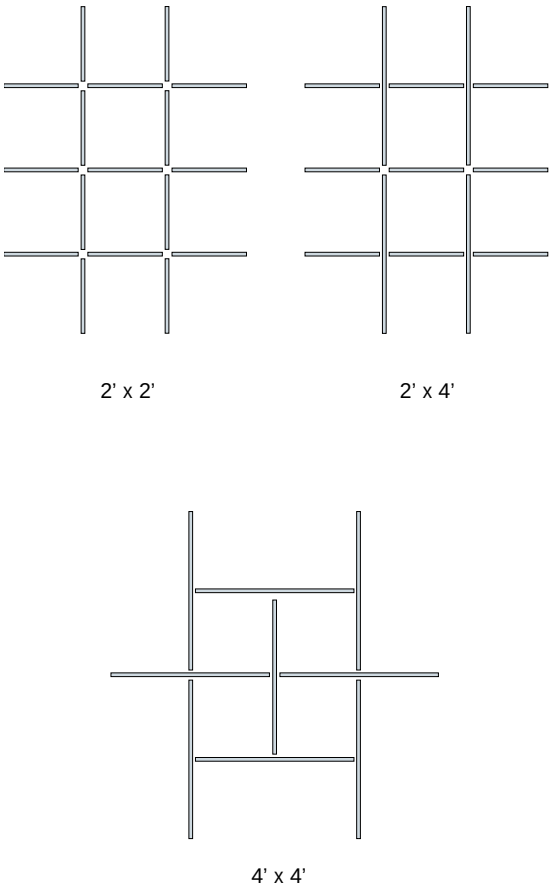


Figure 7: Stringer Patterns

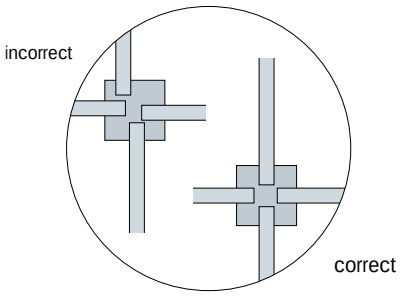


STEP 7 - CREATE THE 'L' SECTION (POSILOCK™ AND STRINGER SYSTEMS)

In order to create a square access floor, you will first need to create a section of access floor that is shaped like an "L" *(see Figure #8 on Page 19).* The "L" section will be used like a giant carpenter's 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**

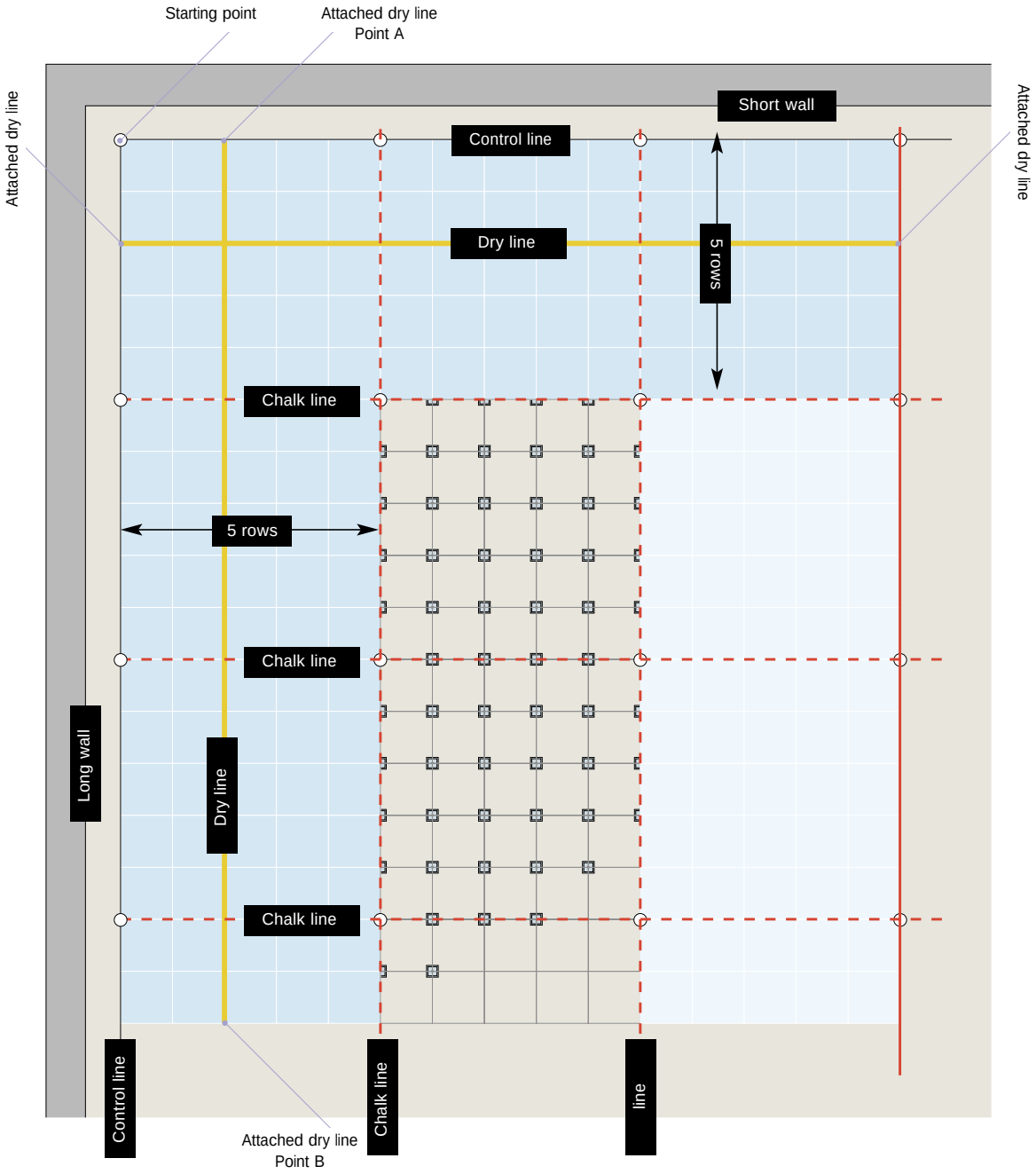
Begin laying in panels at the starting point – lay five rows of panels along the longer wall, making sure that the pedestals nearest to the wall stay on the control lines. (The length of the leg is built up by laying five panel-wide segments – end-to-end – along the wall). Once the leg is fully installed, you need to verify that it is straight by installing a dry line *(See Pages 19 and 20)* or by using a laser line on top of the access floor.



Installation
Field

THE ‘L’ SECTION

Figure 8: The ‘L’ Section



◯ = pedestal shot point

Section 1 5 panels wide ‘L’ shape
Section 2 5 panels wide
Section 3 5 panels wide

Note: This example shows the ‘L’ section being constructed away from the walls. Grey area represents the ‘L’ (upside down in this drawing)

Tate ACCESS FLOORS

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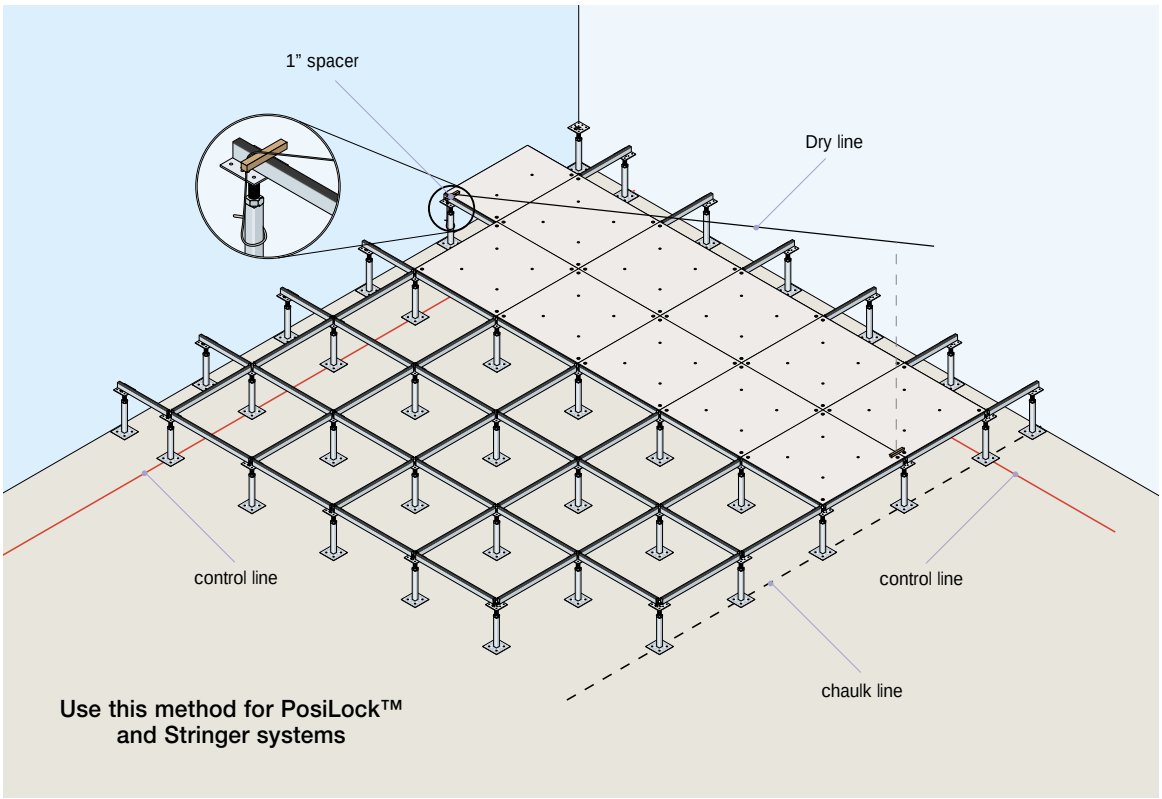
HOW TO INSTALL A DRY LINE

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 #8 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 when you have created the other leg of the L section.

Figure 9: Installing a Dry Line to verify that your grid line is straight



Installation
Field

CHECKING FOR AND CORRECTING UNWANTED CONDITIONS AS YOU INSTALL

Regarding PosiTile® installations: In addition to the checks described below, there are two tests that must be conducted during the course of the installation when PosiTile® carpet tiles are to be installed on the access floor. These are shown on page 45, Appendix.

- **Rocking panel condition**

As you lay out the panels, be sure they do not rock. If you do find "rockers," try the following:

1. Check for dirt or debris on stringer or pedestal head and remove debris.

2. Check panel for a burr on underside of edge and remove burr.

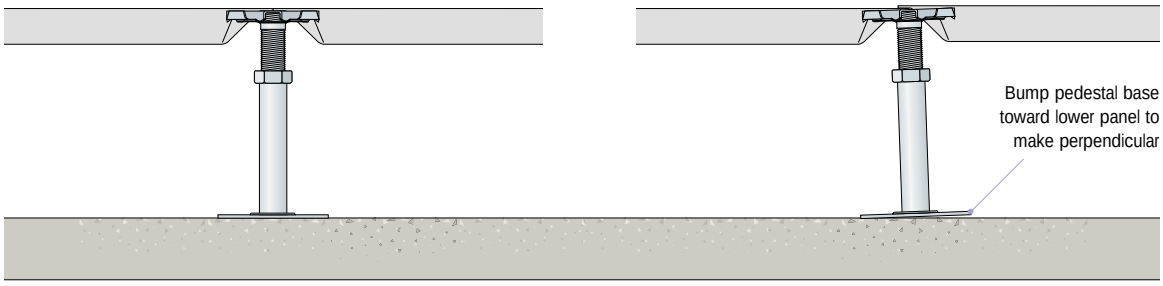
3. Rotate the panel one quarter turn. The rocker may simply disappear. If the panel rocks in a new direction after it has been turned, set the panel aside and try another panel in its place. If the new panel also rocks, lay another panel adjacent to it. If the adjacent panel rocks in the same direction, adjust height or the perpendicularity of the appropriate pedestal.

TILTED PEDESTAL CONDITION

Make sure that all pedestals are perpendicular to the access floor panels (see Figure #10). If a pedestal is tilting due to irregularities in the subfloor, use additional pedestal adhesive and a metal shim if necessary under the low side of the base plate to make it perpendicular.

Make sure the entire gridline is straight *(see Figure #11).* If it is not, you may be able to adjust it by bumping the rows of installed panels with your foot. If this fails, take up every third or fourth row of panels and tap the bases in the direction of the panels that have to be adjusted. All grid lines should be straight before installing the perimeter panels! *Caution: Be careful not to create an overly tight panel installation that will result in difficult removal and reinstallation or a loose installation that will result in unsightly gaps.*

Figure 10: Correcting a tilted pedestal condition



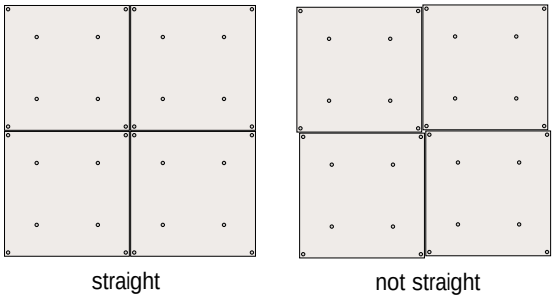


Figure 11: Checking for squareness

Installation
Field

STEP 8 - CREATE THE SHORT LEG OF THE 'L' SECTION AND FILL IN THE 'L'

After installing the long leg of the 'L', the chaulk 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 lease a five-panel-wide section of the floor is installed along its entire length *(see Figure #8 on page 19, Point B for exact location).* Lay five rows of panels along the short wall, perpendicular to the long wall *(see Figure #8).* Follow the previous step (7) for laying panels and be sure to stay on the control lines. After laying the complete 'L' section, check (and recheck) to be sure it is square!

Install five rows of panels inside the 'L' – along either leg *(see section 2 in Figure #8).* The leg that you choose to build upon will often depend upon immediate availability of an area or 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 *(see section 3 in Figure #8).*

STEP 9 - INSTALLING PANELS AROUND LARGE OBSTRUCTIONS

The objective here is to wrap a continuous rectangular frame around the obstruction that will be square with the floor that you've already installed. After a continuous frame is constructed, you will install the cut panels around the obstruction. The frame will be installed in four sections *(see Figure #12). Notes: The obstruction may not be square to your frame – but this condition will be compensated for when you install the cut panels. It is best if the frame is 5 panels wide on all sides, but if the obstruction is closer than 10 feet to a wall you will not have a 5 panel wide section on that side.*

- **Installing Section 1**

Install understructure and full panels as close as you can to the side of the obstruction that you first approach.

- **Installing Section 2**

Install understructure and panels along an adjacent side of the obstruction – as close to the side of it as you can come with full panels. The adjacent side that you choose is the one that faces the other leg of your original 'L' section.

- **Laying Out Section 3**

The next step is to construct a parallel section of floor on the other side of the obstruction (opposite of section 2). To do this you will snap a chaulk control line on the subfloor that is parallel to the edge of section 2. This will be your control line for installing section 3. *Building this section of floor parallel to the edge of section 2 is critical!*

- **To lay out the control line**

1. On the north side of the obstruction, measure the distance from the edge of section 2 (line A) to the nearest gridline that exists on the opposite side of the obstruction (the grid line of the floor that you've installed so far).

2. Approximately 10 feet beyond the south side of the obstruction, measure the same distance from the edge of section 2 (line B) and mark the other end of your chaulk line there.

3. Snap your chaulk line between the end of the grid line of section 1 and the mark you just made. This is your control line for section 3 *(see red line in figure #12).*

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Installing Section 3

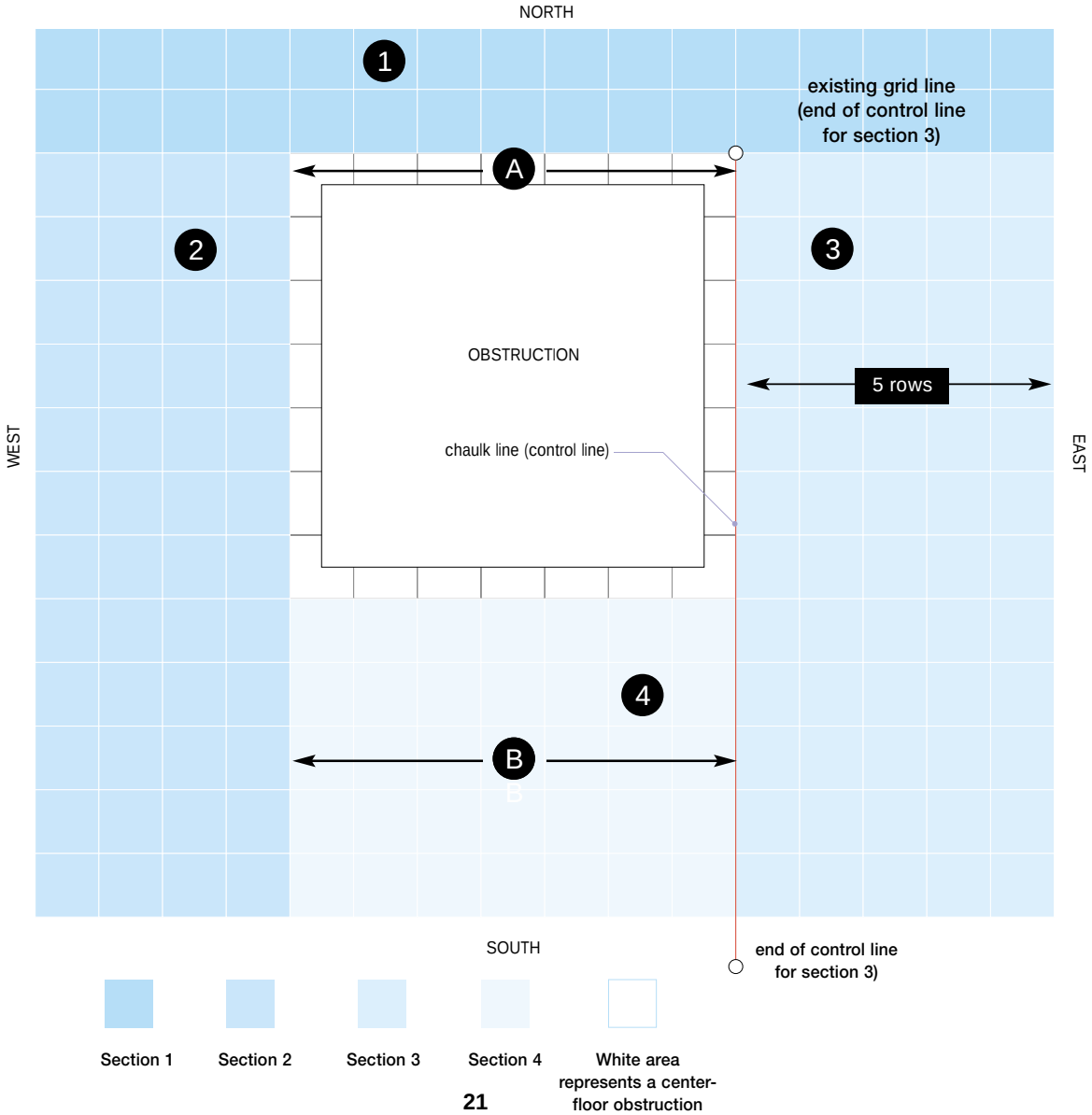
Position a row of pedestals on the control line, using it as a centerline for the pedestals. Install at least five more rows of pedestals parallel to the control line pedestals so that 5 rows of panels can be installed. No more than 5 rows of panels should be installed at this point – it may be necessary to move this entire section slightly if it is too close to (or too far away from) the adjoining section on the south side of the obstruction that you are about to create (section 4). Make sure that your pedestals stay centered on your chaulk control line.

Installing Section 4

Once section 3 extends five panels beyond the south side of the obstruction, you can begin to fill in the gap between sections 2 and 3. This will be section 4.

When the entire frame is 5 panels wide on all sides and there are no gaps at the seams where the sections meet, you are ready to install the cut panels around the obstruction. *(See 'Cutting In' on page 24 for installing cut panels)*. After installing the cut panels you can continue with the remainder of the floor.

Figure 12: Wrapping around a large obstruction



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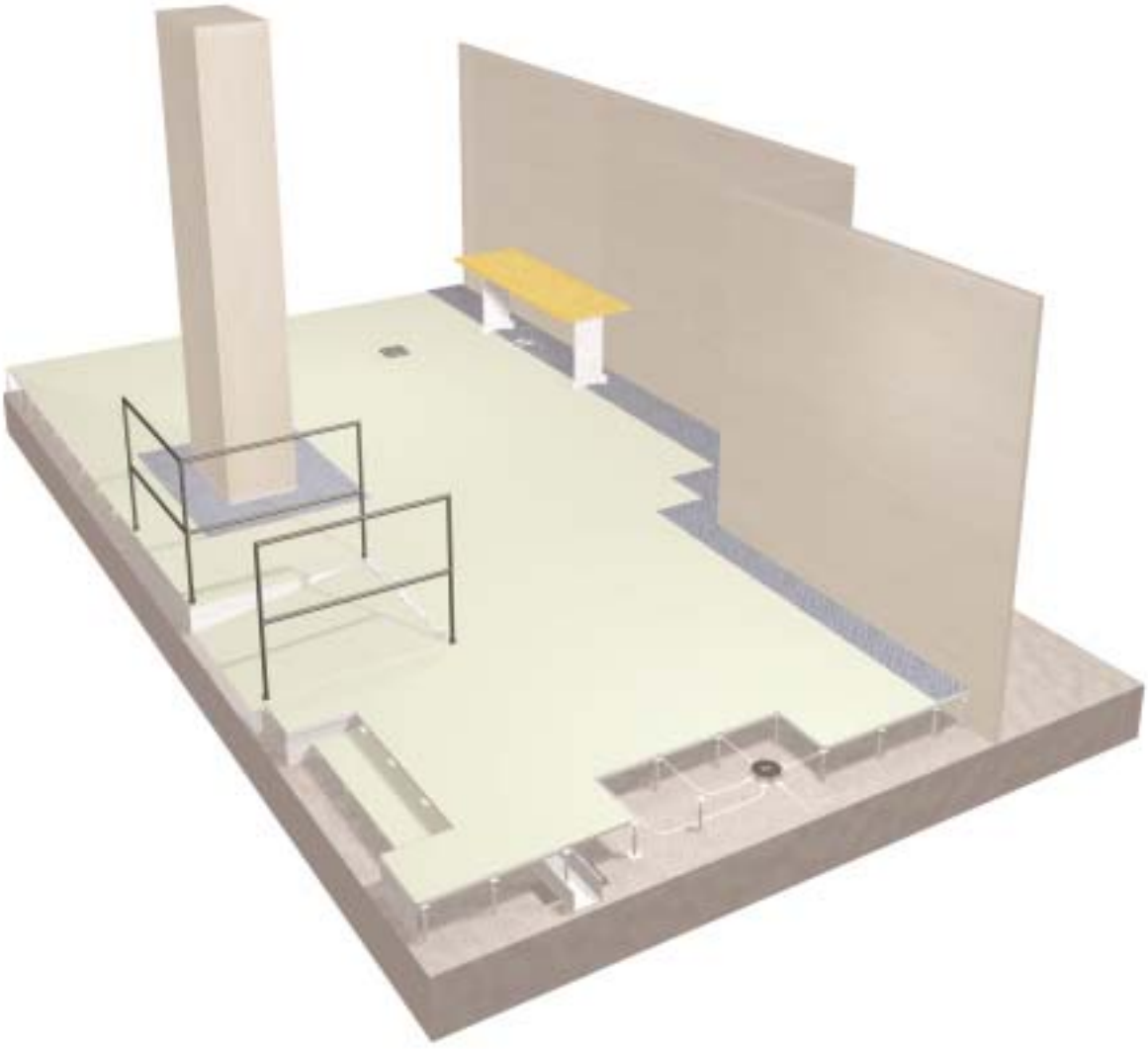
After the field area panels are installed, you are ready to install perimeter panels at columns, obstructions, curbs and perimeter walls.

INSTALLING PANELS AROUND COLUMNS

You should 'cut in' panels around columns before installing panels at other perimeter areas. This sequence will help to prevent the floor grid from getting out of square. (Areas of the floor around columns may have shifted due to foot traffic and material movement during construction). Before installing any cut panel, you must ensure that there are no gaps between surrounding panels, and that all surrounding panels can be easily removed and replaced. Once installed, the cut panels should not be loose.

INSTALLING PANELS AT OBSTRUCTIONS, CURBS AND PERIMETER WALLS

Obstruction, curb and wall areas all fall into the 'perimeter' category. If there is a perimeter area where full panels can be installed, this should be the first perimeter area of installation. If there is not, you should start where the largest cut panels can be installed – and then move to the area where the next largest cut panels can be installed (the area with the smallest cut panels will be last). All cut panels should be measured and cut to fit for a specific location – cut panels should never be interchanged!



Installation
Cutting In

POSILOCK™ SYSTEM PERIMETER DETAILS

- **Before cutting panels**

Refer to Safety Items Required and Power Tools on page 8 for personal protection equipment requirements and saw blade requirements. The cutting operation should be separated from the installation area to prevent cement and steel dust from damaging the finished floor surface (and increasing your cleaning job at the end).

- **Lay out panels for cutting**

With the field panels nearest to the wall correctly positioned on the understructure, measure the distance from each field panel to the wall for each perimeter panel to be cut. Scribe the panels for each cut. *Note: When cutting a laminated panel that has a directional pattern, be sure that your planned cut is correctly oriented with the pattern direction.*

Tip: When making a straight cut in a panel that will abut a wall or curb, it is best to bevel the cut from the top by tilting the band saw table approximately 5° (the bottom of the panel will be the receding edge). This will allow the panel to fit into place more easily.

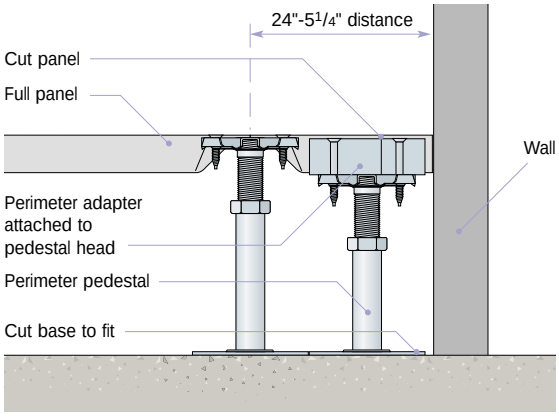


Figure 13a

- **Installings Panels Cut 5 ¼" or wider**

(see Figure #13a)

Perimeter pedestals should be fastened as close to the wall (or curb) as possible. If the base plate will not fit into the space, you may need to cut ½" off of the wall side of the plate (or both sides if the space will only allow a 3" wide base plate).

This will allow you to install a section of panel as small as 5¼" wide. To install the cut panel: remove the last full panel from the understructure, install the cut panel – then replace the field panel. The gap between the perimeter panel and the wall should not exceed 1/16". If the cut panel is in a high traffic area (at an entry or at the top of a ramp) it should be supported at the center of the cut edge with an additional pedestal. The additional pedestal should be attached to the subfloor with adhesive and adjusted so that it supports the bottom of the panel.

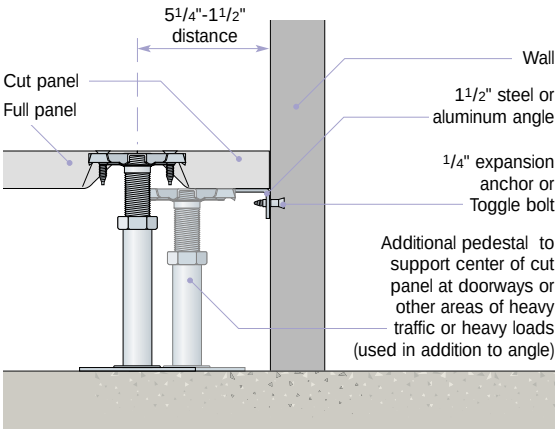


Figure 13b

- **Installings Panels Cut 1½" to 5¼" wide**

(see Figure #13b)

Sections of cut panels less than 5¼" wide cannot be supported with pedestals at the cut corners due to a lack of space at the wall for perimeter pedestals. In this case, you can support the cut end of the panel with a 1½" steel or aluminum angle attached to the wall or curb *(see Figure #13b).* To attach an angle to a wall or curb, follow these steps:

1. Snap chaulk lines along the length of the wall at the finished floor height level.
2. Make marks below the chaulk line at distances equal to the thickness of the panels.
3. Position the top of the angle along your marks and attach at that position.

a. If the wall is concrete, attach with ¼" expansion anchors at 16" to 24" intervals, with minimum embedment into the concrete of 1⅝".

5. If the wall is a metal studded wall, attach to the studs with ¼" toggle bolts or #14 sheet metal screws.

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- **The fasteners must penetrate the studs and be attached to every stud.**

If this cut section of panel will be subjected to traffic or heavy static loads, it should also be supported at its middle with an additional pedestal. *(As shown in Figure #13b).*

- **Alternate installation method for panels cut 1½ to 2" wide**

A narrow gap can be filled with a 1½ – 2" wide panel section that is bolted to the field pedestals with cornerlock screws (there are no perimeter pedestals in this case). It must be supported at its center with an additional pedestal. Note: This is not a mandatory method – it is only presented as an alternative to the angle-support method.

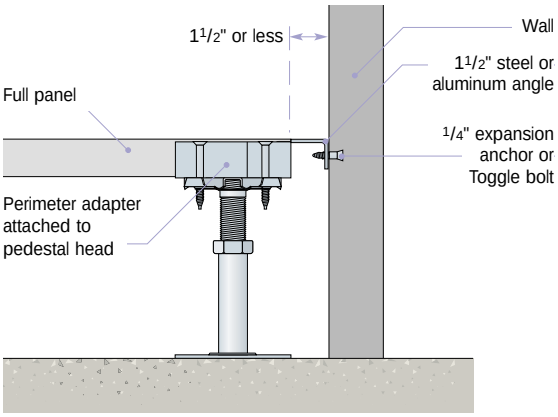


Figure #13c

- **If a perimeter gap is 1 ½" wide or less (see Figure #13c)**

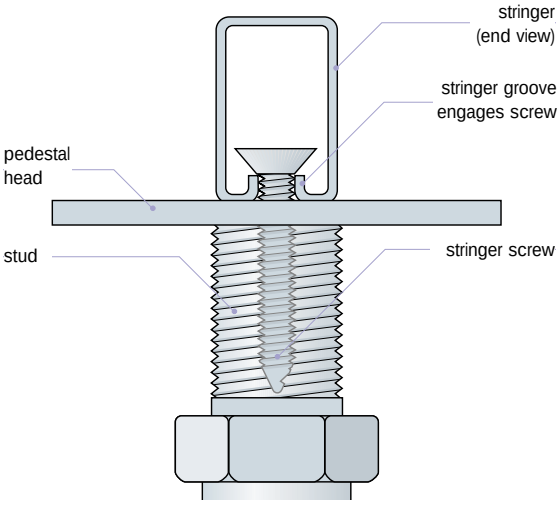
This gap may be filled with a steel or aluminum angle that is flush with the top of the access floor. The angle is attached to the wall or curb in the manner described above. If there will be no covering such as carpet to cover the angle, it can be painted to match the wall base.

STRINGER SYSTEM PERIMETER DETAILS

If the perimeter gap is greater than 4½" wide, install pedestals against the wall and attach stringers to those pedestals *(see Figure #14a)*. 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.*

Tip: To attach the stringer to the perimeter pedestal *(see Figure #14b)*: Before putting the perimeter head into the perimeter base, run a stringer screw into the head. Slide your designated perimeter stringer onto the head so that the groove on the underside engages the screw (the screw head will be inside the stringer). Put the pedestal head into the perimeter base (with the stringer loosely attached) so that the unattached end of the stringer rests on the field head. Attach the stringer to the field head in the normal manner. Then, at the perimeter pedestal, reach below the head and tighten the screw by hand until it is tightly holding the stringer to the head.

Figure 14b: Stringer connection at wall



If the perimeter gap at a wall is 4½" wide or less, you can support the cut panel section with 4 foot stringers cantilevered beyond the last row of field panels *(see Figure #14a).* The stringers will have to be cut shorter than 4 feet. Any cantilevered stringer should be fastened to two field heads with three screws. *Do not cut a short piece of stringer to support the cut panel!*

Installation
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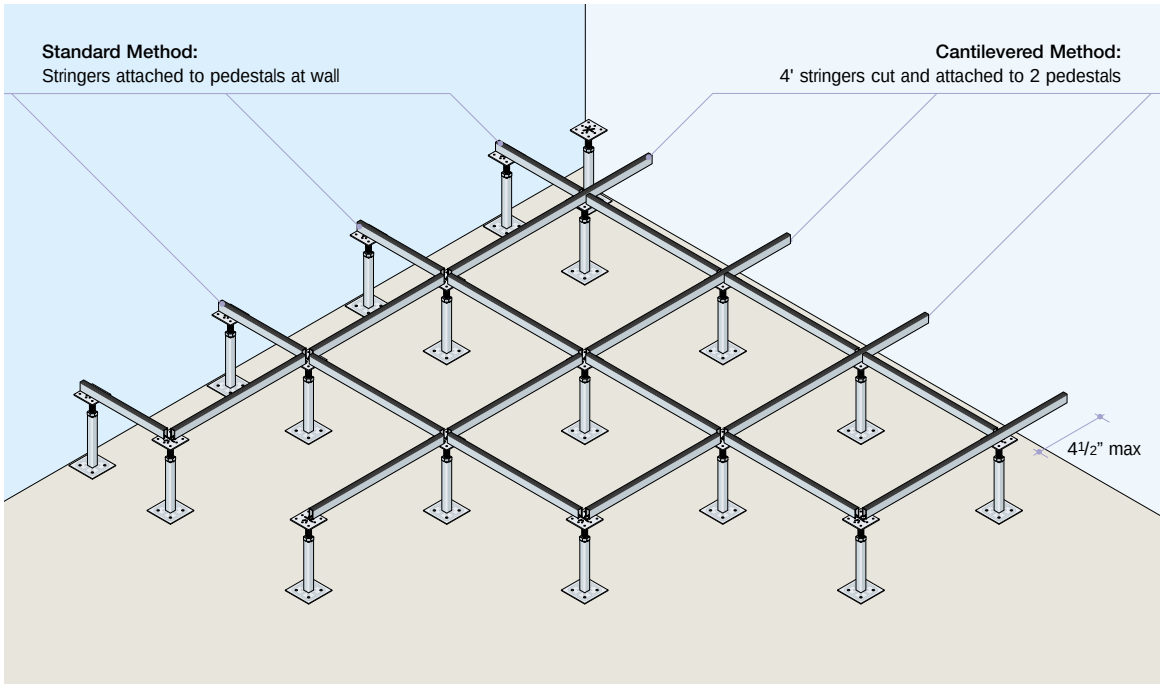


Figure 14a: Perimeter options for stringer systems

SAFETY REQUIREMENTS FOR PANEL CUTTING

When using a hand-held heavy duty (or industrial) reciprocating saw, follow the guidelines below:

1. Use a bench or work table on which to cut the panels, possibly a B&D Workmate bench with clamps. This will spare workmen's back and knees.

2. Be sure tools are properly grounded and dry, and that a well lit work area is available.

3. Use the correct saw blade (14 to 20 teeth per inch metal cutting blade).

4. Be sure the entry hole is large enough to start the saw blade without binding.

5. Always use personal equipment including:

- Ear protection.
- Safety glasses and full face shield (clear plastic).
- Long sleeve shirt or sleeve protectors.
- Light weight work gloves (light enough to use a saw but tough enough to protect from sharp metal edges and hot saw dust).
- Steel toe safety shoes or boots.
- Common sense. Remember – you cannot replace your sight, hearing or your life.

Installation
Cutting In

RECTANGULAR CUTOUTS – EXTERNAL AND INTERNAL

Panels with cutouts extending to the edge of the panel can be cut with a bandsaw. Tate recommends that a cutout be at least 3 inches away from the edges of the panel in order to maintain a reasonable degree of structural integrity for the panel. Cutouts inside the perimeter of the panel can be cut with a heavy-duty hand-held reciprocating saw. Use bi-metal saw blades with approximately 14 teeth per inch for this. *(Cutout sizes for Tate accessories are shown in Figure #15).*

Follow these steps for making your rectangular inside cutout:

- Lay out the cutout on the panel. (*see Figure #16*)
- Drill pilot holes in two opposite corners. Be sure holes are large enough for the saw blade to pass through without binding.
- Cut out the hole.
- Deburr all cutouts made for grills or electrical boxes where no trim will be used.

Figure 15: Cutout sizes for Tate accessories

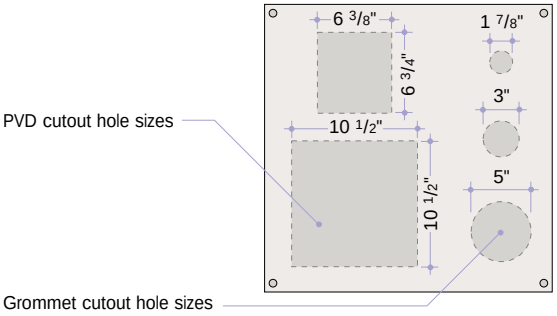
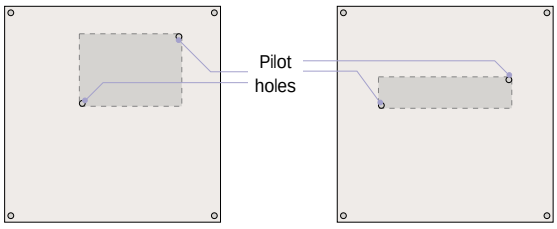


Figure 16: Laying out internal cutouts



Factory made cutouts

It is advisable to have internal cutouts (round and rectangular) cut in the factory whenever the size and location is known in advance. Doing this will save you considerable time during installation.

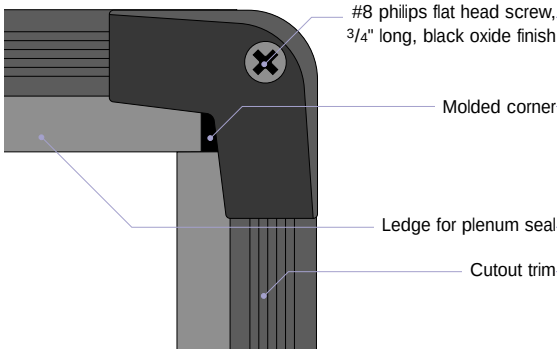
ROUND CUTS

Round or grommet cutouts can be made with a hole saw up to 6" in diameter. A drill press is recommended for this operation. Use a very slow speed heavy duty drill with a bi-metal cutting hole saw blade. If you use a hand-held drill, pre-drill a hole at the center of the cutout location. For round holes larger than 6", lay out the circle on the panel. Drill one entry hole along the edge of the circle just inside of the line and cut out the panel with a reciprocating saw, and deburr all sharp edges.

INSTALLING PROTECTIVE TRIM AROUND CUT EDGES

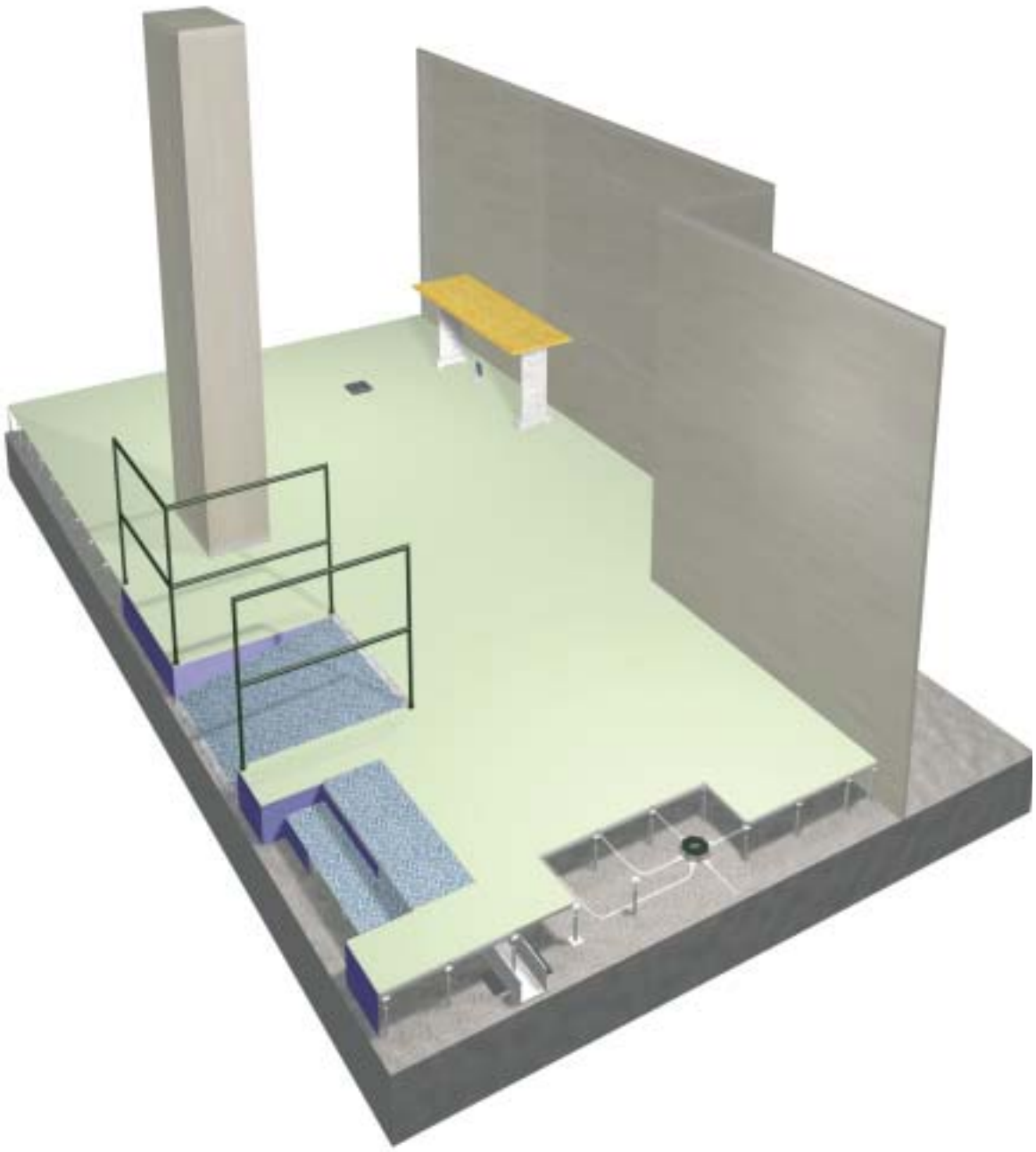
All rectangular cutouts to be used as a passageway for cables or other services must have protective trim along the cut edges. Tate's cable cutout trim components are: universal cutout trim in 4-foot lengths, and molded corners and screws. (An optional foam plenum seal is available to seal the opening). Before cutting the trim, take a look at how the molded corners were designed to hold the trim in place. Cut the vinyl trim pieces straight at each end so that the ends can fit under the corners *(see Figure #17)*. Secure each molded corner in place with a screw into the panel. If the cutout extends to the edge of the panel you will have to attach the trim near the edge of the panel without molded corners. To do this you can attach the straight piece directly to the panel with a pop (blind) rivet or screw. If you use a screw you will have to countersink the screw in the trim piece.

Figure 17: Installing protective trim around cut edges



Accessories

Ramps, Steps and Fascia



Tate ACCESS FLOORS

Accessories
Ramps, Steps and Fascia

RAMPS

- **Recommendations for building a ramp**

Ramp Size: The ramp width should be in two foot increments and the overall length should be in odd foot dimensions (including the width of the 12" ramp shoe) so that there are no cut panels in the ramp. For example: a ramp that is three panels long with the 12" ramp shoe would be seven feet long overall.

Ramp Slope: The slope of a ramp can vary from 1" to 2" of rise per foot. The A.D.A. allows no more than 1" of rise per foot (use A.D.A. ramp shoe supplied by Tate). The slope of the standard shoe is 1½" per foot.

Panel Grade: ConCore® panels should be used for ramp construction and should be one grade stronger than the floor panels.

Understructure: Use standard swivel pedestal heads with 4' stringers along the ramp's length where possible. Attach the ramp panels to the swivel heads with combo screws.

Ramp Covering/Recommendation: Step Master by Armstrong

- **Ramp installation procedures**

(refer to figures 18 - 22 for detailed illustrations)

1. To calculate the length of the ramp in inches:

- For a rise of 1" per foot: multiply the Finished Floor Height of the access floor by 12
- For a rise of 1.5" per foot: multiply the Finished Floor Height of the access floor by 8
- For a rise of 2" per foot: multiply the Finished Floor Height of the access floor by 6

To calculate the length of the ramp in panels: Divide the length of the ramp (inches) by 24. If the result is less than a full number, round up to the nearest full number.

Example
20" high ramp with 1.5" of rise per foot:
20" x 8 = 160" ramp length
160" ÷ 24" = 6.66 panels, rounded up to 7 panels

2. Position the ramp shoe at the bottom end of the ramp by measuring the length of the ramp from the edge of the access floor to the subfloor - but do not attach to the subfloor at this time.

3. If the ramp will have an exposed side, cut fascia bottom angle(s) for the exposed side to run from the end of the access floor to the ramp shoe. You will have to cut it at an angle near the bottom so that it does not rise above the surface of the ramp.

4. To place and level the pedestals for the ramp:
Lay your leveling bar along the length of the ramp at its center – resting one end on the edge of the access floor and the other on the shoe (if the bar is long enough). If the bar not long enough, you will have to rest the low end on a pedestal – adjusting it so that the bottom of the bar is at the correct height for that point in the ramp. (The bottom of the bar is where the top surface of the ramp will be.)

Position a line of swivel pedestals in 2' increments under the bar, starting at the edge of the access floor and working toward the bottom of the ramp. Each pedestal head should be approximately 1.5" below the bottom of the bar to allow for the height of the panels. Cut bases to length as required. *Note: it will be necessary to cut the base and stud for the row of pedestals near the bottom of the ramp (this may also be necessary for the second row from the bottom).*

Using your centerline of pedestals as a guide, position parallel lines of pedestals on either side to make up the ramp's width. Adjust the heights to the same heights as your Center Line pedestals. *Note: If the ramp has an exposed edge, the perimeter pedestal bases will sit on the bottom leg of the bottom angle.*

5. Attach the 4' stringers along the length of the ramp. Start at the top and attach the end of the first 4' stringer to the hole on the higher side of the swivel head so that three inches are resting on the head. Rest the stringer ends on the subfloor where they meet the shoe. *Note: there will be no stringers at the sides of the ramp.*

Accessories
Ramps, Steps and Fascia

5. Attach the 4’ stringers along the length of the ramp. Start at the top and attach the end of the first 4’ stringer to the hole on the higher side of the swivel head so that three inches are resting on the head. Rest the stringer ends on the subfloor where they meet the shoe. *Note: there will be no stringers at the sides of the ramp*

6. Attach the 2’ stringers along the width of the ramp.

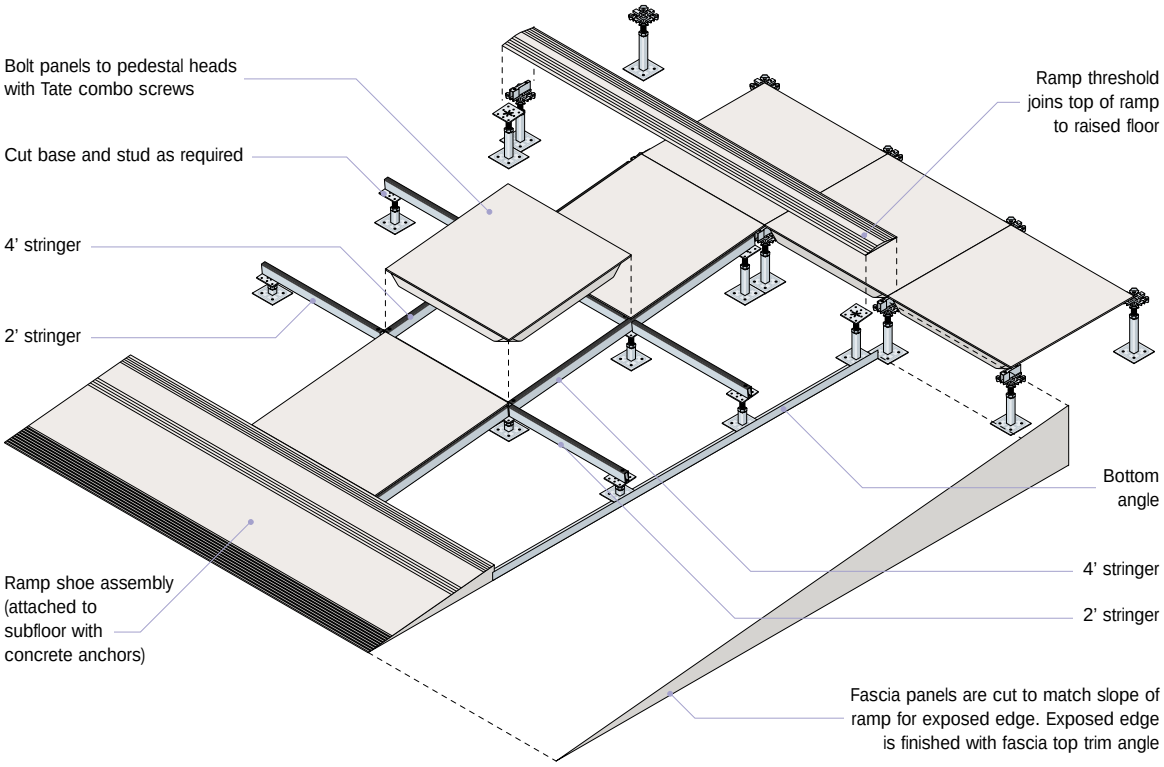
7. After all pedestals have been correctly positioned, glue them to the subfloor. Where there is an exposed edge, first glue the bottom angle to the subfloor and then the perimeter pedestals to the angle.

8. Lay rows of panels across the ramp’s width – starting at the bottom and working your way toward the top. Adjust the position and height of the pedestals as necessary. Bolt the panels to the pedestal heads with combo screws. *(see Figure #20 on page 32)*

10. If the ramp has an exposed edge: Carefully cut the fascia plate at an angle so that the top edge meets the edge of the panels. Attach the plate to the bottom angle with 1/8” blind rivets or #8 flat head machine screws. Secure the plate at the top edge of the ramp with trim angle. The trim angle will be fastened to the top surface of the panels with trim screws. *(see Figure #22 on page 33). Note: The trim angle should be installed over the ramp covering.*

11. Attach the shoe to the subfloor with flat head bolts into concrete anchors at 24” centers. Typical bolt is 1/4”-20 x 2” with star tapin *(see Figure #19 on page 32).*

Figure 18: Ramp assembly with exposed edge



Tate ACCESS FLOORS

Accessories
Ramps, Steps and Fascia

RAMP DETAILS

Figure 19: Bottom of ramp

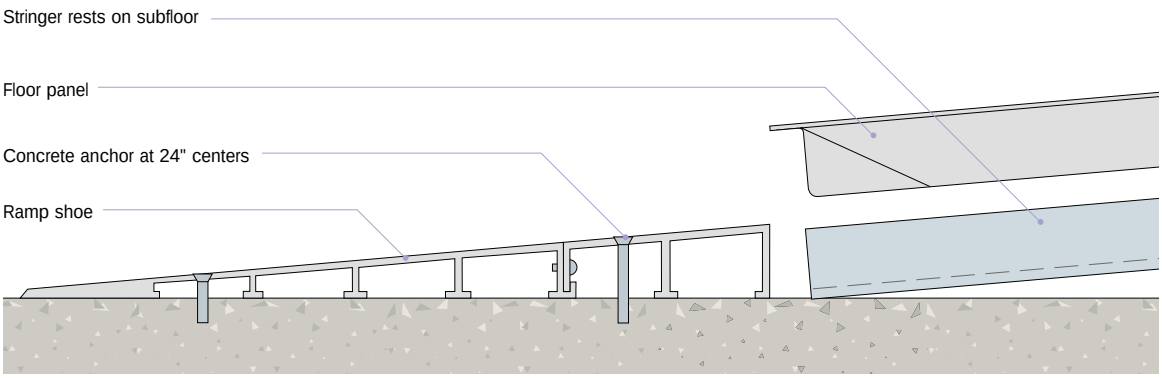
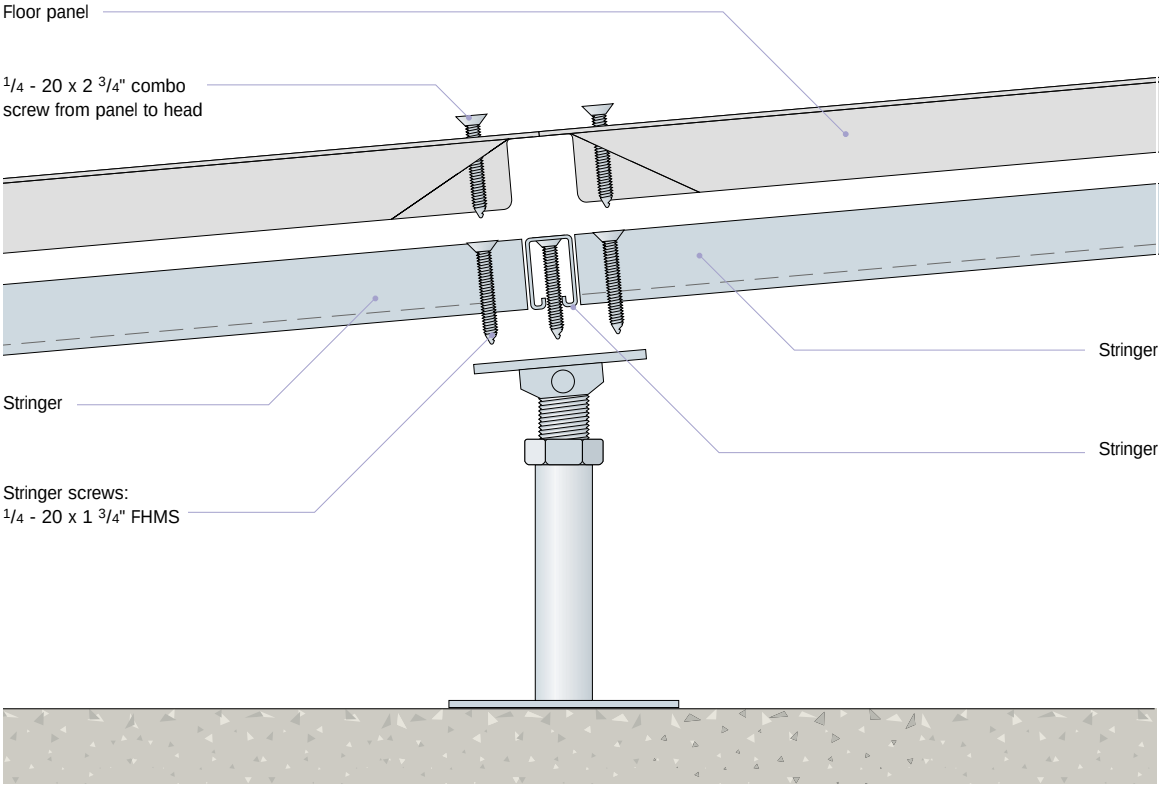


Figure 20: Connections at swivel pedestal head



Accessories
Ramps, Steps and Fascia

RAMP DETAILS (continued)

Figure 21: Top of ramp

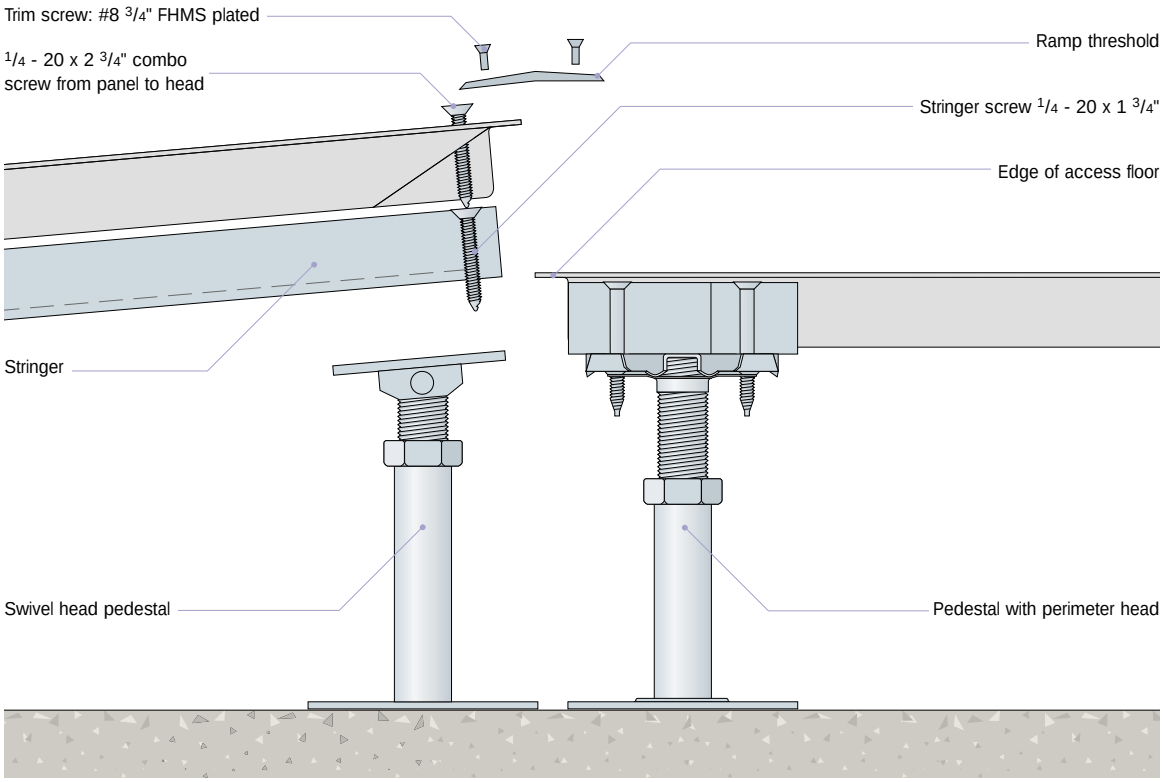
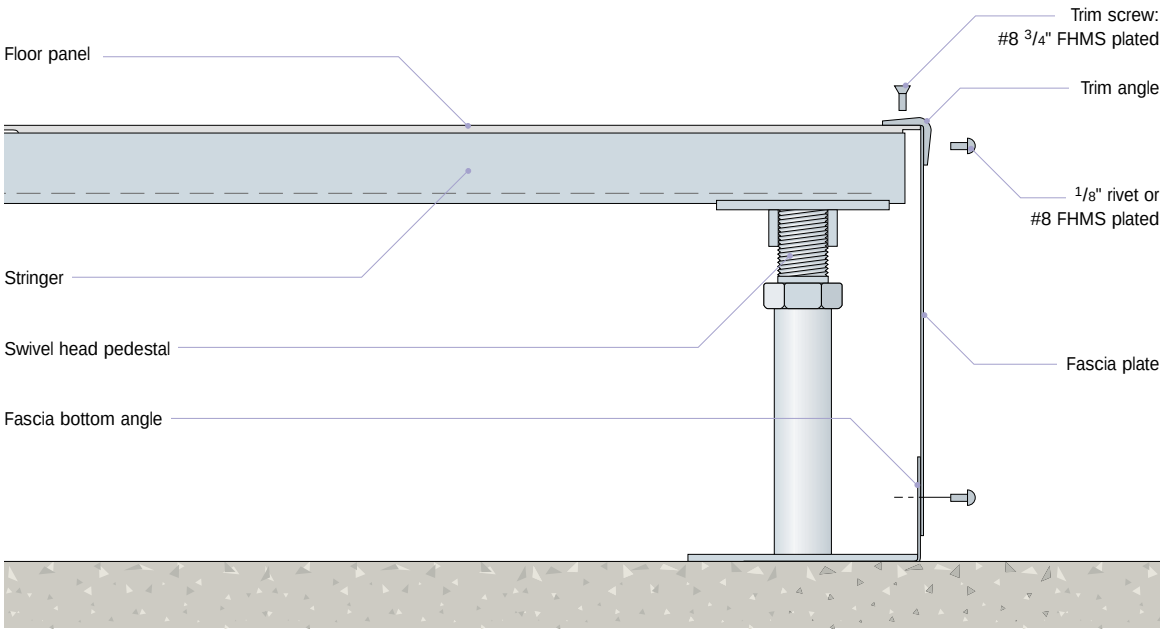


Figure 22: Side of ramp (exposed edge condition)



Tate ACCESS FLOORS

Accessories
Ramps, Steps and Fascia

STEPS

Note: Check local building codes to determine whether steps may be built with access floor materials. In some areas, unitized (preformed) steps may be required to comply. Tate does not provide one-unit step assemblies.

● Recommendation for building steps with access floor materials

1. Limit the overall height of the step assembly to three risers.

2. The panels in the first and second steps should be attached to the subfloor with diagonal braces.

3. Keep the width of the assembly in two feet increments if possible to allow for uncut panels to be used (cut panels are inherently weaker).

4. Verify allowable step tread and riser dimensions with local code officials. As a guide, use a step tread of 12" and a riser height of 6". All risers should be the same height.

5. Cover treads with non-slip floor covering.

● Step installation procedures

(Refer to figure #23 for detailed illustration)

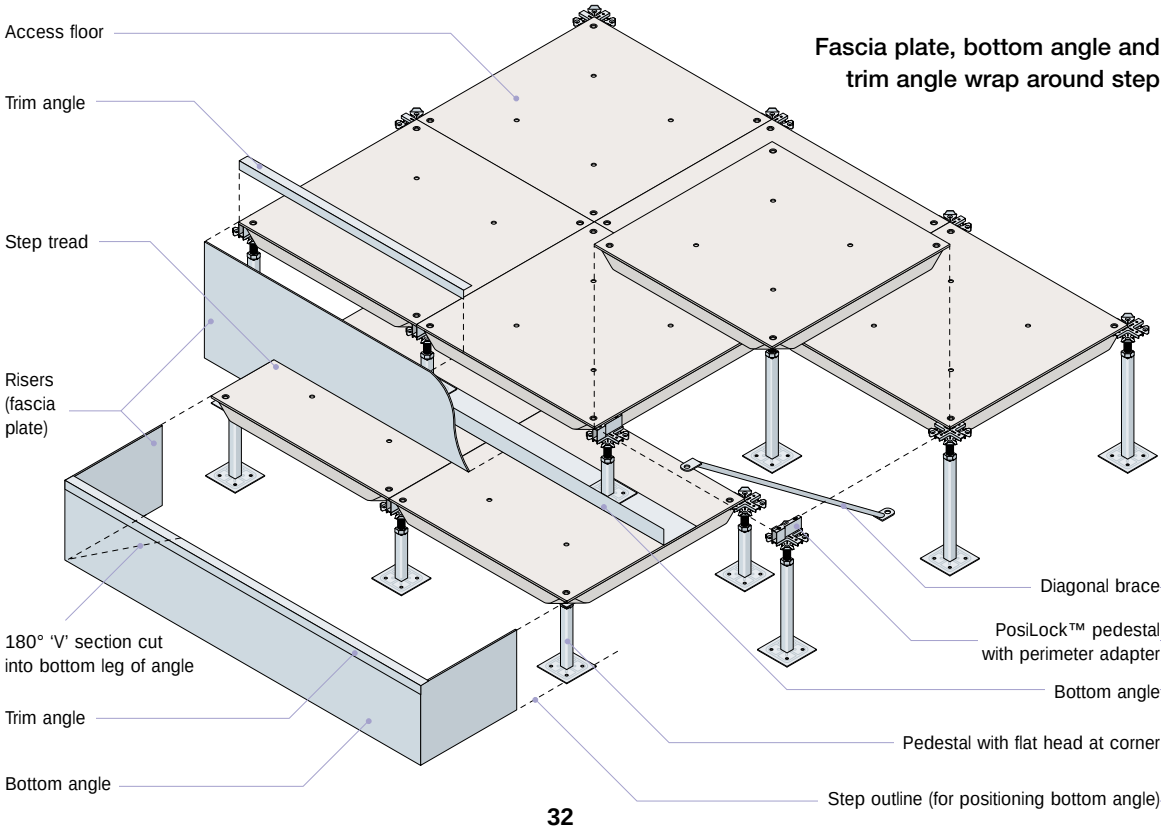
Note: The following illustration is for a two-riser step.

1. Draw an outline on the subfloor of the entire step assembly. Cut a section of bottom angle equal to the width of the steps plus the length of the sides of the assembly. The angle will be bent 90° at the corners so that one piece forms the front and sides of the assembly. *Note: To bend the angle 90°, you will have to cut a 180° 'V' section out of the bottom leg of the angle so that it can be bent.*

2. Attach the bottom angle to the subfloor with pedestal adhesive, making sure that it is positioned on your outline.

3. Use adhesive to fasten pedestals to the bottom angle that forms the riser. (The pedestals at the corners of the step will be less than 24" from the inner pedestals and will provide support at the panels' frames). Use flat heads at the corners. The pedestals at the panel joints should utilize PosiLock™ heads with perimeter adapters. Fasten a row of PosiLock™ pedestals to support the back end of the step under the access floor.

Figure 23: Two riser step assembly



Accessories
Ramps, Steps and Fascia

4. Place a row of panels to create the first step and maneuver the pedestals at the corners to ensure that they are adequately supporting the panel frames. Temporarily remove the panels and shoot the pedestals into place with a powder actuator gun. *Note: All pedestals should be attached to the subfloor with adhesive.*

Each panel that is used to form the lower step must also be attached to the subfloor with a diagonal brace. Attach one end of a diagonal brace to the underside of a panel (using a TEK screw) so that the lower end of the brace extends beyond the edge of the panel. Place the panel on the pedestal heads so that the lower end of the brace extends under the access floor. After you cornerlock the panel to the pedestal heads fasten the brace to the subfloor with a 1/4" x 1 1/2" steel expansion anchor.

If you are building a three riser step assembly then each panel in the second step should also be attached to the subfloor with a diagonal brace.

If you are building a step assembly at a stringer system then the perimeter panels at the top of the access floor must also be attached to the subfloor with diagonal braces since there will be no cornerlock screws securing the panels in place.

Make sure that the pedestals are adjusted to the proper riser height and replace the panels. Fasten the panels to the heads in the front and back of the step – using Tate's 1/4 - 20 x 2 3/4" combo screws for the heads with the perimeter adapters. (It will not be possible to fasten the panels to the flat heads at the the corners because the cornerlock holes in the panels and heads do not align).

5. Mark the depth of the tread on the lower step and position a section of bottom angle along its length on your marks. Attach the angle to the panels with self-tapping TEK screws (one screw per linear foot is adequate). You can attach the pedestals to the bottom angle and panel with pedestal adhesive or screws. Adjust the pedestals to the proper riser height.

6. Fascia plates and trim angle are cut to wrap around the front and sides of the steps. Attach the plate to the bottom angles with 1/8" pop rivets. Fasten trim angle to the top of the panels with Tate supplied trim screws. The trim will hold the top of the fascia plates against the panel edges. Trim angle can be wrapped around the corners or cut and mitered (wrapping is preferable because it eliminates sharp corners). *Note: You need to install the tread covering before installing the trim angle.*

Note: (see Fascia Installation Procedures, page 36 for more details on fascia installation).

Accessories
Ramps, Steps and Fascia

FASCIA

● Creating a stable exposed edge with diagonal braces

Stringer systems and freestanding systems require the use of a diagonal brace to secure every panel at an exposed edge. This is also true of any condition where the last panel cannot be secured by at least two cornerlock screws on its inbound side. A diagonal brace can be made of 1/2" electro-mechanical tubing by flattening both ends and drilling holes to accept 1/4" anchors. To secure a panel: Attach one end of a brace to the underside of a panel (using a TEK screw) so that the lower end of the brace extends beyond the inbound side of the panel. Place the panel on the stringers (or PosiLock™ heads) so that the lower end of the brace extends under the access floor. Fasten the brace to the subfloor with a 1/4" x 1 1/2" steel expansion anchor *(see Figure #24a).*

FASCIA INSTALLATION PROCEDURES

1. To correctly position the fascia bottom angle on the subfloor, drop a plumb line from the edge of the access floor to the subfloor and mark the subfloor accordingly. Note: If the base plates extend out beyond the marks you will have to trim the plates so that they are even with the edge of the access floor 2. Attach the bottom angle to the subfloor with pedestal adhesive, making sure that it is positioned within your marks. If you are installing the fascia while the adhesive under the pedestals is wet: slide the leg of the angle under the pedestal base plates and secure the pedestals to the angle with adhesive. If you are installing the fascia after the adhesive under the pedestals has set: cut a series of bottom angle sections to fit between the pedestal base plates.

3. Verify that your bottom angle is on your marks and secure it to the subfloor with powder actuated fasteners.

4. To scribe the fascia plate for cutting to the proper height: hold a section of plate against the bottom angle and the edge of the access floor and scribe a line on the plate by using the edge of the access floor as a guide. Cut the plate 1/8" below the scribed line so that the cut piece will come just up to the bottom edge of the panels.

5. Cut sections of trim angle and miter all corners. Drill and countersink holes in the top of the trim angle with spacing on 18" centers. Attach the trim angle to the access floor surface with Tate supplied trim screws – making sure that you are firmly securing the fascia plate against the panels.

Note: the trim angle should be installed over the floor covering. If the covering is not yet in place when you are installing the fascia, you will have to remove and reinstall the trim when the floor covering is applied.

Accessories
Ramps, Steps and Fascia

Figure 24a: Attaching a diagonal base

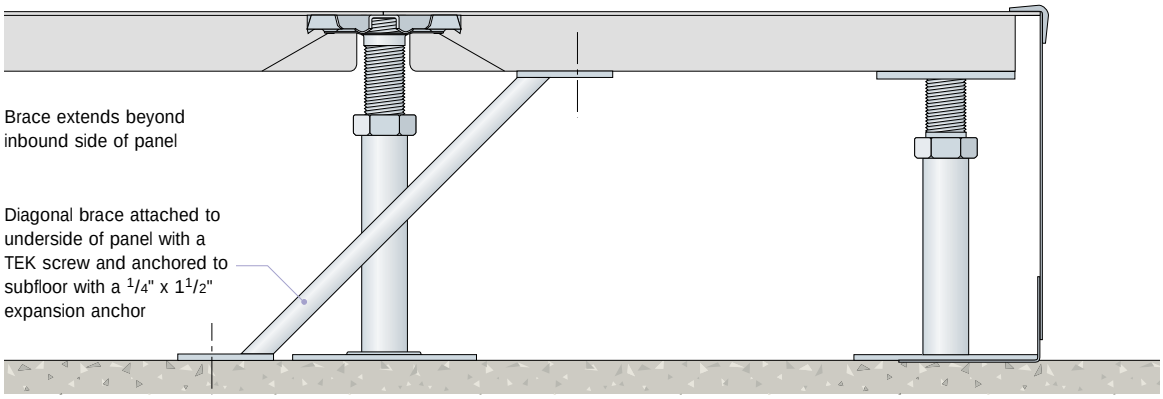
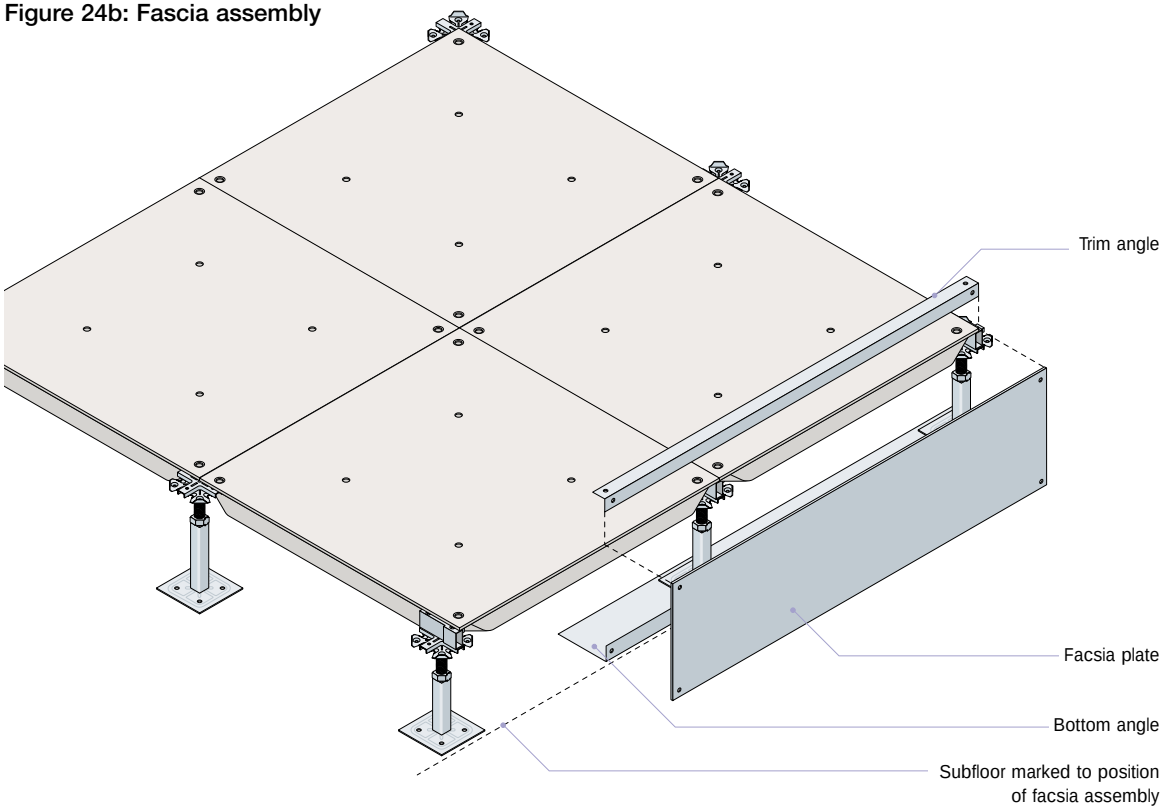
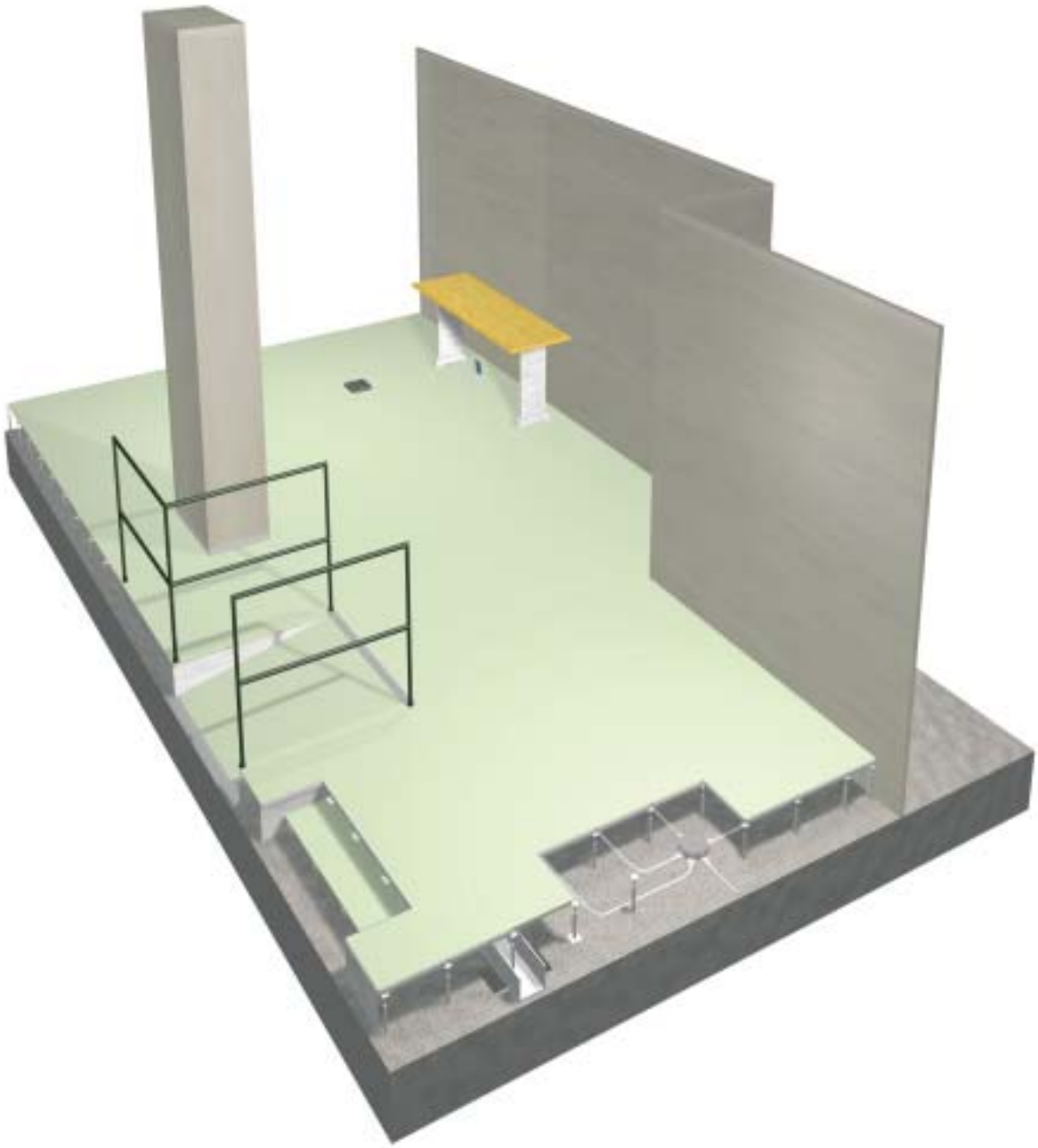


Figure 24b: Fascia assembly



Accessories
Special Conditions



Accessories
Special Conditions

PLENUM DIVIDERS

To build this divider, you will need to supply the following materials: 4" metal stud wall channel (which will run the entire length of the divider), firestop compound and a non-flammable sealant. The following design requires that the divider be installed along a panel seam.

- **Installation Procedure (see Figure #25)**

1. During the normal phase of pedestal and panel installation, install sections of bottom angle end-to-end (with pedestal adhesive) under the row of pedestals where the divider is designated to be. Where pedestals will be supporting the divider, install bases that are 1" shorter in height to allow for the addition of stringers at the top. Adhere the pedestals to the bottom angle with pedestal adhesive. Install heads in these bases and continue with the rest of the installation. If you are installing a PosiLock™ system, you will replace the PosiLock™ heads with flat heads when you come back to complete the divider installation.

2. After completion of the normal phase of installation, remove the two rows of panels over the area where the divider is to be installed. If the system is PosiLock™, replace the exposed row of PosiLock™ heads with a row of flat heads.

3. Place the wall channel on top of the heads along the entire length of the divider. Drill holes in the channel in line with stringer holes and cornerlock holes in the pedestal heads. (You can drill 1/2" holes in the channel to make it easier to align them with the screw holes in the heads). Install 4' stringers on top of (and parallel to) the channel and simultaneously secure the stringers and the channel to the pedestal heads with stringer screws.

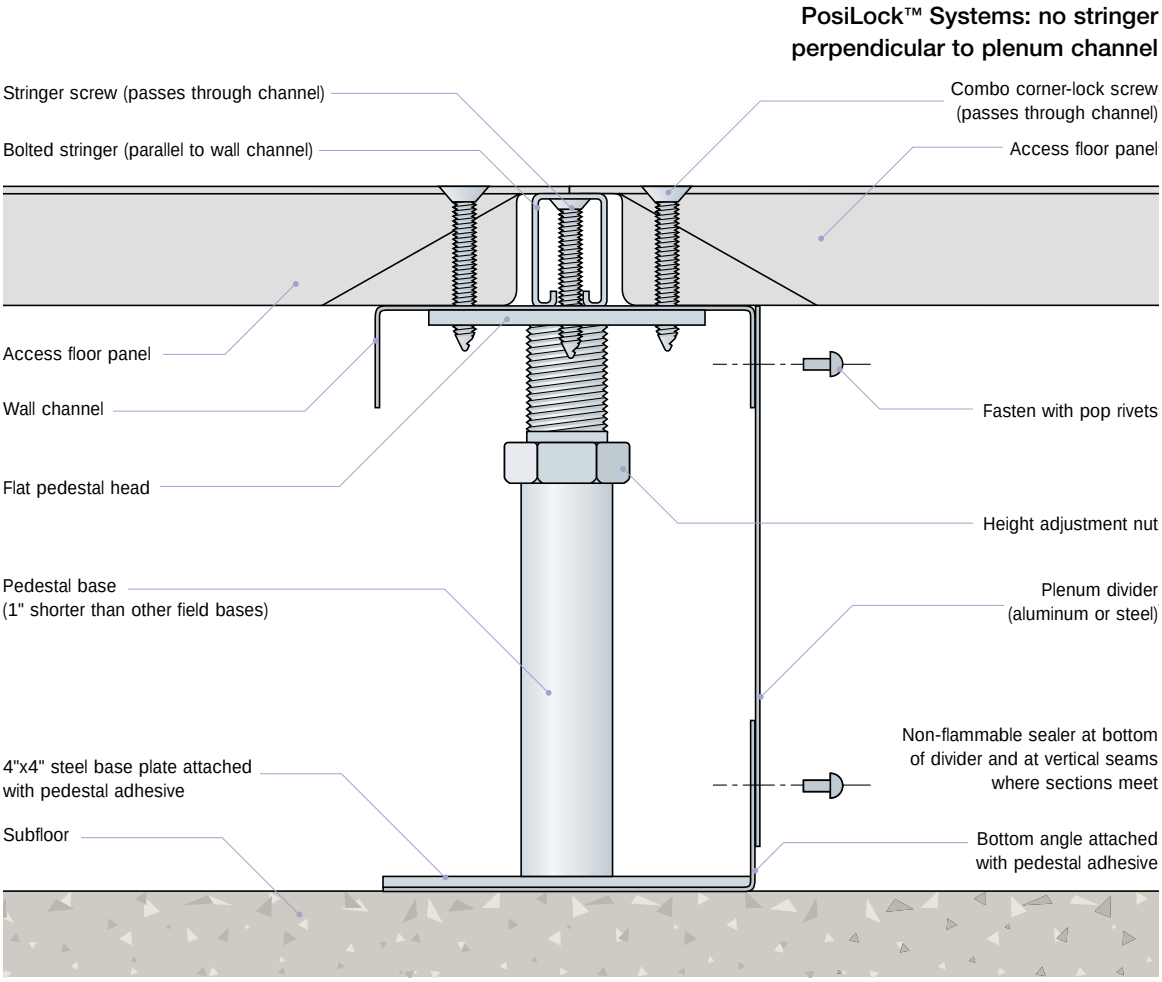
4. There will be 1" gaps between the ends of the stringers that need to be filled to completely seal the plenum. Cut stringers to one-inch-long pieces to fill the gaps – and secure them in place by using firestop compound as an adhesive.

5. Adjust the height of the pedestals supporting the channel so that the panel ends over the divider will be level with the rest of the access floor. *Warning: Once you attach the sheets to the wall channel and bottom angle, you will no longer be able to make height adjustments to the divider.* To complete the divider: cut sections of aluminum or galvanized steel sheets so they extend from the wall channel down to the bottom angle. Attach them to the channel and bottom angle with pop rivets or TEK screws. The seams where the aluminum or steel sheets meet must be sealed with a non-flammable sealant.

6. Reinstall both rows of panels and cornerlock the ends that rest on the stringers to the flat heads with Tate's combo screws. Attach the opposite ends to the PosiLock heads with standard cornerlock screws. (If you are installing a stringer system then you will not be screwing the panels down).

Accessories
Special Conditions

Figure 25: Plenum Divider at Panel Seam



BRIDGING

Bridging may be required to span a trench or an obstruction on the subfloor that cannot be moved. It should be reserved for use only when an obstruction cannot be moved. Stringers should never be used to construct a bridge.

Bridges should be made from welded structural steel – and are typically supplied by the general or mechanical contractor. For bridges that are more than 3 feet wide or must support heavy loads, a structural engineer should specify the bridging material.

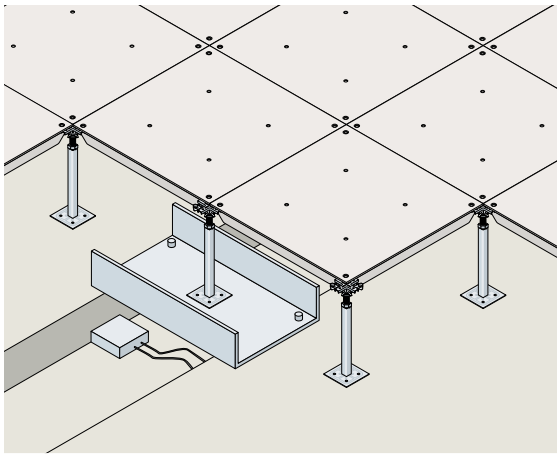


Figure 26: Bridging a Trench

Accessories
Special Conditions

EXPANSION JOINTS

If an expansion joint must be installed in an access floordue to the presence of an expansion joint in the subfloor, the access floor joint should have the same joint width movement capability as the subfloor joint. The access floor joint can be directly over the subfloor joint or near it. The method on this page details an access floor joint directly over the subfloor joint. To use this method, you can end the access floor on one side of the joint and restart it on the other so that you have full panels on both sides of the joint, or install the floor in the normal way - then remove, cut and replace the panels that span the subfloor joint. If you choose to cut the panels then you must support them at the cut edges with additional pedestals.

In the case of stringer or freestanding systems, you need to attach diagonal bracing to retain every panel at the joint *(see Creating a Stable Exposed Edge with Diagonal Braces, page 37).*

There are two ways to cover an access floor expansion joint.

1. Attach to the access floor surface a pre-made expansion joint that is designed to be used on a concrete slab *(see Figure #27).*

2. Cover the opening with threshold material – which is fastened to only one side of the joint *(see Figure #28).* In this case you must use threshold that is wide enough to cover at least 2" of the access floor on both sides of the gap.

Figure 27: Pre-made Expansion Joint

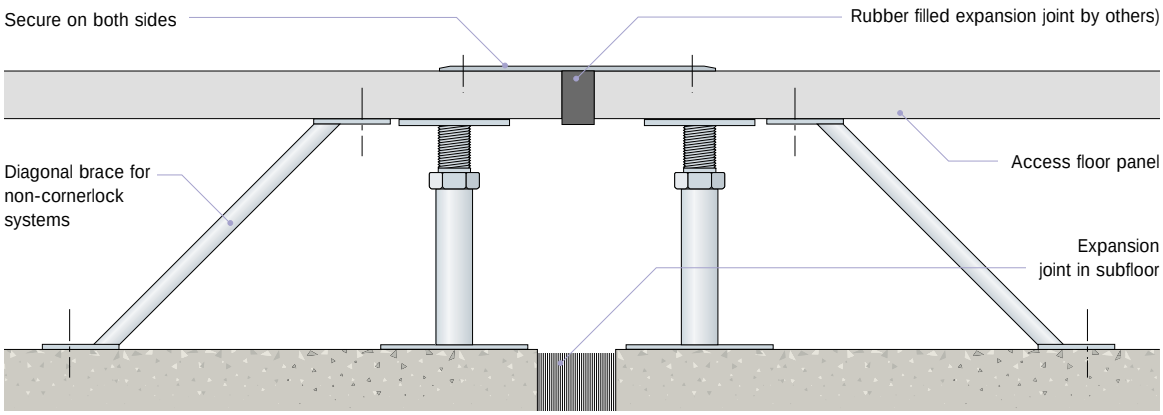
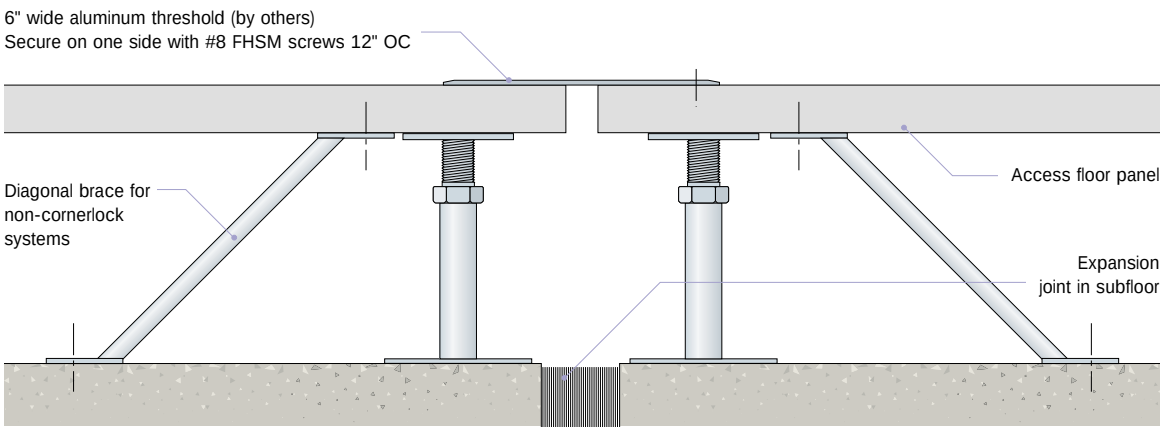


Figure 28: Expansion Joint with Threshold Covering



Secure diagonal braces with TEK screws to bottom of panels. Use 1/4" x 1 1/2" expanding anchors in concrete.

Appendix

POST INSTALLED ANCHORS

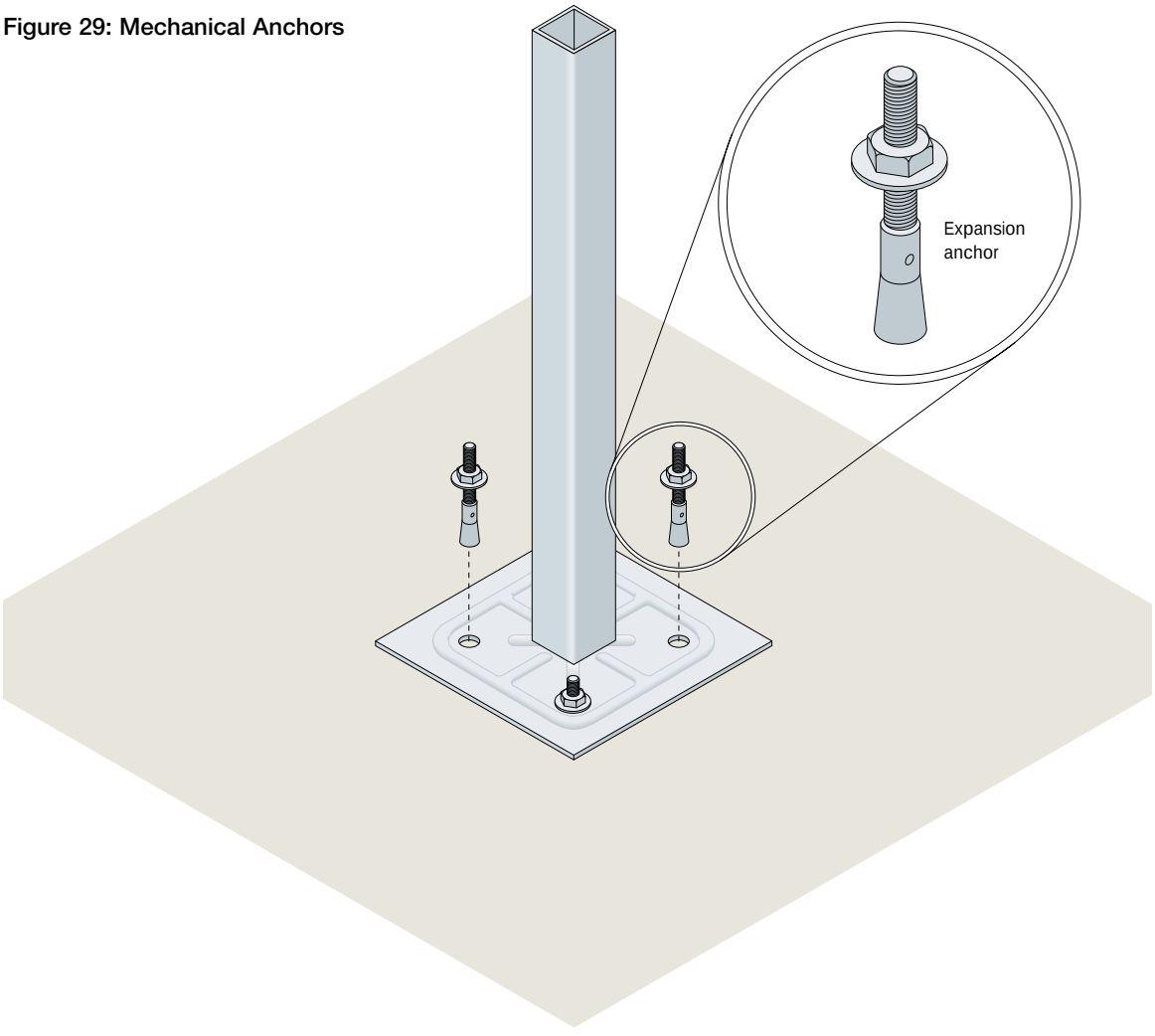
The pedestal adhesive should be allowed to cure extensively before installing mechanical anchors in order to prevent forcing the base plates to conform to irregular subfloor contours as the anchors are tightened.

- **To install an expansion anchor**

Use a Hilti Kwik-Bolt or equal. Position the anchor holes within the pre-punched holes in the base plates. Drill holes in the concrete in the same nominal diameter as the anchors being used. *Note: holes in base plate must be 1/16" to 1/8" larger than the anchor diameter. Vacuum the dust from the holes and the surrounding areas.*

Drive the anchor to the recommended depth and tighten to the manufacturer's recommended torque. If adhesive was originally used as a leveler for the base, you need to avoid pulling the base to one side (which can pull the pedestal 'out of plumb'). You should torque the anchors down evenly (alternating between the two if necessary) to avoid causing the plate to shift. It may be necessary to insert a metal shim under one end if there is a significant gap under one side of the base plate that would cause the plate to shift.

Figure 29: Mechanical Anchors



Appendix

ACCESS FLOOR INSTALLATION WITH SHAW POSITILE®

The following requirements are specific to the installation of access floors for PosiTile® carpet tile. By following these requirements, you will ensure a flexible, modular, one-to-one installation with excellent functionality.

SITE REQUIREMENTS

In accordance with Tate's standard Installation Manual, the installation area must be closed to the weather with the recommended environment at 50 degrees F to 90 degrees F, and 20% - 70% relative humidity, 24 hours/day during and after installation. Tate recommends that the floor should be installed as close to the normal operating environment as possible. Access floor must be conditioned in this environment at least 24 hours before the installation begins.

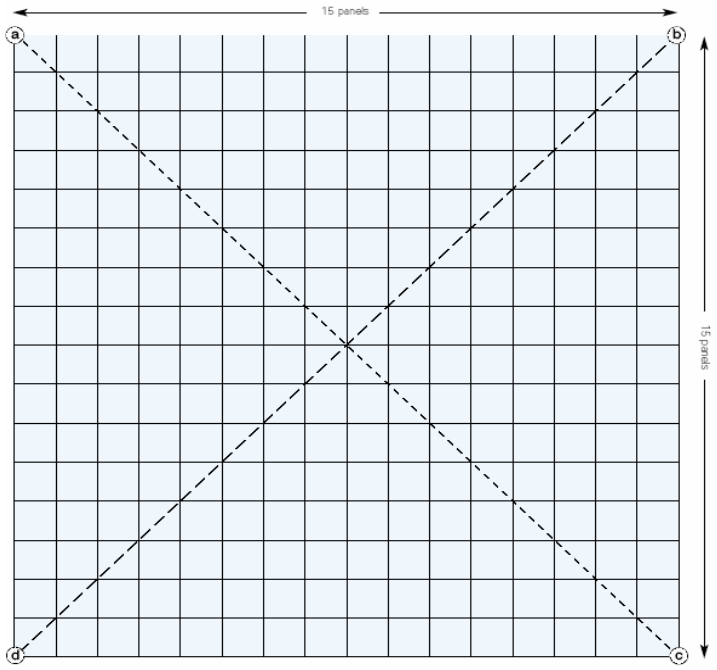
ACCESS FLOOR REQUIREMENTS

1. **ACCESS FLOOR MATERIALS:** PosiTile can only be used and is only warranted for use with factory-produced Tate ConCore Panels with PosiTile holes. PosiTile is designed for use on PosiLock understructure with cornerlock screws; however, it can be installed on bolted stringer systems *when the panels are bolted down using combo screws.*

2. **ACCESS FLOOR SQUARENESS:** In accordance with Tate's standard Installation Manual, the access floor installation must be sound, square and level. Lay out control lines to ensure squareness using a tape measure, laser or electronic transit for exceptionally large areas. Monitor the squareness of the panel installation by performing the following quick test:

- Measure diagonally from corner A to corner B across the surface of a 15X15 panel area.
- Now measure diagonally across from corner C to corner D. The difference between the two measurements cannot exceed 1/8" (Figure #1).

Figure 1 : Checking for squareness



Appendix

3. **ACCESS FLOOR GRIDLINES:** Panel grid lines must be straight and at right angles, saw-toothing is unacceptable. (See Figure #2)

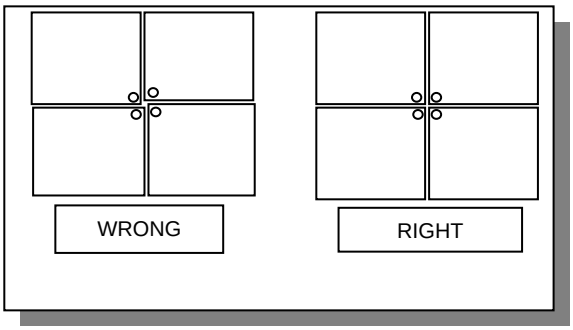
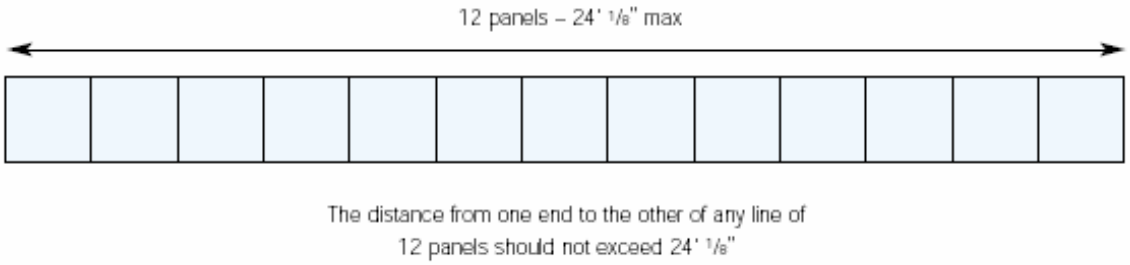


Figure 2

4. **ACCESS FLOOR TIGHTNESS:** Care should be taken that the floor is not installed too tight or too loose. Panels should be easily removable without binding. Panel grid should be no less than 24' and no greater than 24' 1/8" when measured across 12 panels (See figure #3)

Figure 3



5. **ACCESS FLOOR LEVELNESS:** The access floor panel must be level from panel to panel and at joints. The panels must be level, flush and even on all four sides.

6. **ACCESS FLOOR POSITILE LOCATOR HOLES:** Before installing PosiTile remove the green plastic plugs completely from each hole. There are two recommended procedures for removal:

1. Use a flat paint scraper, or
2. Insert a flat screw driver into plug and pry out.

(See Figure #4)

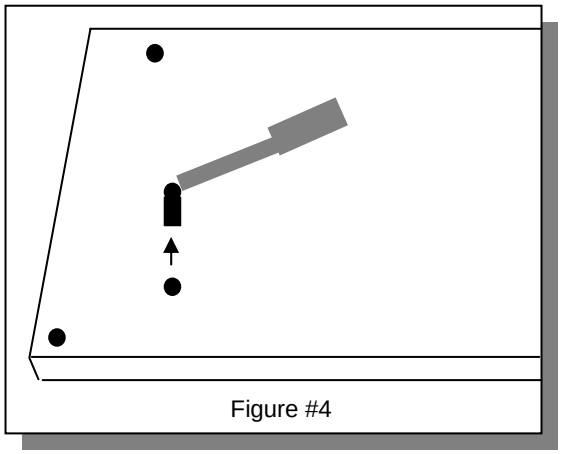


Figure #4

POSITILE® INSTALLATION GUIDELINES

Once the access floor installation is complete and in accordance with the requirements outlined herein, you are ready to install the PosiTile carpet.

1. **SPECIAL INSTRUCTIONS**

A. Check the quantity, color and lot numbers of the tiles before beginning the job. DO NOT MIX DYE LOTS (MO#). All claims for damages or deficiencies must be made prior to installation.

B. If the carpet tile boxes are crushed or damaged during transit, the material needs to be taken out of the boxes and re-stacked in order to lay flat.

C. Be sure that other contractors such as painters and masons have completed their work or take the necessary precautions before installation begins.

Appendix

2. **SITE REQUIREMENTS**

A. The PosiTile must be stored at a minimum of 65 degrees F prior to installation. Tiles must be conditioned at room temperature for 48 hours before and during installation and remain at ambient conditions.

B. The access floor must be clean and free of all foreign matter. Ensure that all green plugs are removed.

3. **POSITILE INSTALLATION**

A. When installing PosiTile to achieve a monolithic look, install all tiles in the same direction as the pile directional arrows printed on the back of the tiles.

B. The loop pile tiles will have some yarn blossoming at the edges, which is inherent to this type of construction. Face yarn or the strands from the primary backing may require occasional trimming.

C. The backing of each carpet tile will have three or four dots of releasable adhesive on opposite edges of the tile. When installing PosiTile, the installer should hold the tile at the edges where the adhesive is located. With these edges slightly bent upwards, position the PosiTile buttons in the panel holes. Once the PosiTile is positioned properly with all four buttons in the holes, press down the adhesive edges. If the adhesive is allowed to grab before the buttons are in the holes, the tile will have to be pulled up and repositioned. Even though PosiTile can be installed by starting just about anywhere on the panel grid, we highly recommend installing by building pyramids (quadrants) from the center of the floor. This gives the installer much better control in making sure all positioning buttons are in the positioning holes correctly. All positioning buttons fitting properly in the positioning holes is a key point in having a successful installation. PosiTile seams may be visible depending on style and color. The seams will usually blend in over time. Vacuuming with a brush during cleanup is helpful.

D. During installation and construction do not allow motorized pallet jacks or lifts to travel on the PosiTile carpet. Providing a path by exposing the bare panels is recommended.

E. Information should be provided to the general contractor, owner and/or furniture installer on the load performance rating of the access floor to protect against damage to the panels due to an overload condition.

F. Instructions should be provided to the general contractor, owner and/or utility installer that panels should be removed only with an approved panel puller, not pried up with a screwdriver. Further, that care should be taken when re-installing panels that the PosiTile carpet on adjacent panels is not caught.

QUESTIONS

Specific questions regarding installation not covered or in question should be referred to Tate's Technical Service department @ 1-800-231-7788. Any variance from these procedures is the responsibility of the installer.

Appendix

PEDESTAL OVERTURNING MOMENT TEST

Purpose: To determine the overturning moment capacity of an access floor pedestal assembly and it's application to the sub-floor.

- **Preparation:**

1. A minimum of five (5) pedestal assemblies shall be secured to the subfloor utilizing the specified pedestal adhesive. The adhesive should be applied with the practice normally found in actual installations.

2. For adhesive application, be sure to let adhesive cure for the minimum cure time recommended by the adhesive manufacturer. (Minimum 30 – 60 days.)

3. If the concrete has a sealer on it (or if a sealer will be applied before installing the access floor) then five pedestals should be tested on the sealer and five should be tested at an unsealed area to conduct a control test. When there is no unsealed area to conduct the control test you will have to remove sealer from concrete by sanding.

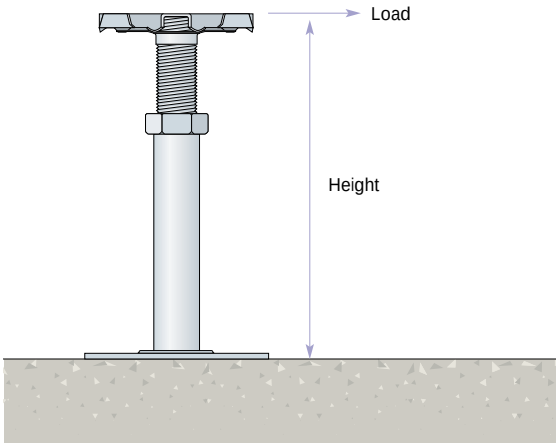
Note: Be sure to allow cure time for the sealer.

4. For mechanical anchors, follow manufacturer's installation procedures for the specified anchor.

TEST PROCEDURE:

1. Use a force gauge to apply a lateral load to the top of assembly at the pedestal head.

2. Apply the load slowly and continuously until the pedestal overturns. Record the readings (pounds) for each pedestal. Multiply the pounds by the lateral load height. For example: if a reading of 80 lbs. was achieved before failure and the lateral load was applied at 16" above the subfloor, then 1280 in./lbs (16 x 8) is the overturning moment. Be sure to record what failed and how it failed; i.e. concrete to sealer, sealer to adhesive, pedestal base weld, pedestal base bent, pedestal tube bent. The form on the following page may be used to record test data.



- **Equipment:**

The scale, or force gauge, used to measure the test should be of good

Appendix

OVERTURNING MOMENT TEST DATA REPORT

Pedestal Description:

_____

Fastening Method:

_____

(Adhesive, Mechanical, etc.)

Pedestal Height: _____ for _____ Finished Floor Height

Height of Applied Load: _____

Pedestal Assembly:

1 Horizontal Load _____ lbs. _____ inch pounds

2 Horizontal Load _____ lbs. _____ inch pounds

3 Horizontal Load _____ lbs. _____ inch pounds

4 Horizontal Load _____ lbs. _____ inch pounds

5 Horizontal Load _____ lbs. _____ inch pounds

Average _____ inch pounds

Fastening Method Shall Be Fully Described:

_____

_____

_____

_____

_____

Description of Failure (if any) For Each Pedestal Shall Be Reported:

_____

_____

_____

_____

_____

If you require additional technical services information, please call the Tate Hotline at 1-800-231-7788

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