Owner's Manual

Tate®

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Care & Use of the Tate Access Floor System

Access floor systems are supplied and installed in conformance with the requirements set forth by individual project specifications and approved submittal documents. It is important to clearly understand the design capabilities of the Tate access floor system as installed in specific projects.

Equipment Moving Precautions

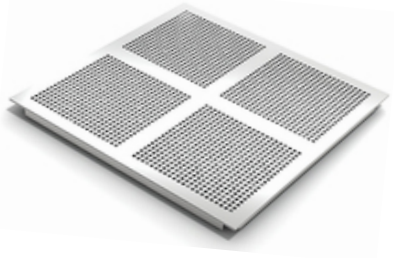
The access floor must be protected from overloads and circumstances that exceed its specifications. Movement of heavy loads and equipment may require protection of the floor system through the use of plywood or other suitable load-distributing materials.

- The All Steel panel is a hollow steel panel designed primarily for static loads. Please consult your Tate representative before heavy loads are exerted on the floor.*
- The ConCore® panel, similar in design to the All Steel panel, is filled with a structural cementitious material. It has excellent static and rolling load capabilities.*
- Floor Loading: All panels should be in place before loading the floor. If panels are removed to connect the equipment, care must be taken when working under the floor not to move or dislodge pedestals or stringers.

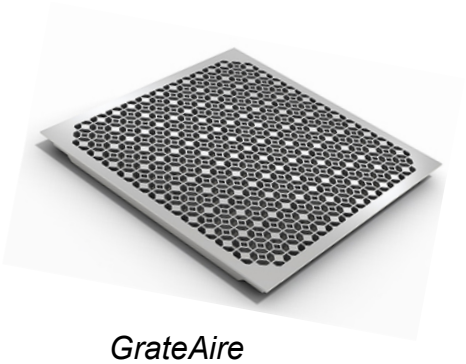
** Please contact an authorized Tate dealer or call the Tate Technical Hotline at 1-800-231-7788 for procedures to follow when wheel sizes and loads differ from those identified in Tate product specifications.*

All Steel Panel

ConCore® Panel

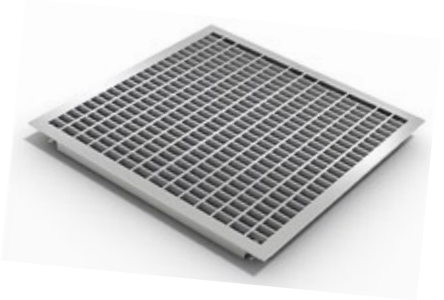


Perf Panel



GrateAire

DirectAire



DirectAire AL

Adjustments to the Floor System

It is advisable for the floor owner or owner's representative to get a demonstration of the use of pedestal height adjustment and leveling mechanism by a representative of the floor provider before making adjustments to the system. Periodically inspect the installed floor and make adjustments for the following conditions:

Rocking Panels

1. Check to assure that pedestal head gaskets are positioned correctly and/or stringers are securely fastened. Make sure that no carpet pile or dirt prevents panels from seating correctly.
2. Adjust the pedestal leveling nut after confirming that the pedestal is sitting flat on the subfloor.
3. For persistent problems with tiled panels, try rotating the panels by 90 degrees.

Tipping at Perimeter Panels

Tipping generally occurs when the perimeter panel is improperly supported. Adjust the leveling nut on the pedestal support, raising or lowering the pedestal head until the panel sits firmly on the pedestal head or stringer.

Types of Panel Lifters

Suction Cup Lifter
For use on bare panels and panels with a hard surface floor covering.

Claw Lifter
For use on panels with cut pile carpet laminated to the panel.

Special Precautions

1. The use of screwdrivers, pliers or other objects to pry or lift panels should be prohibited.
2. Do not disturb the level adjustment of the support pedestals and position of the stringers while floor panels are out of the floor system.
3. When reinstalling panels with trim, use a carpet shoehorn to ensure the life of the trim.
4. Always make a final check to see that panels are correctly in place, level and secure.

Removal and Reinstallation

An access floor can become misaligned due to mishandling or abuse when working under it. Follow these procedures for removal and replacement of panels and stringers to maintain the system in its original condition.

Bolted stringer systems: If you have a bolted stringer system, be aware that inadvertent abuse can create a costly out-of-square grid condition. See Stringer Systems this section before working under a stringer system.

TOOLS FOR REMOVING PANELS AND STRINGERS

The following tools are required to remove panels and stringers from your floor.

1. Battery powered screw gun
2. #3 Philips replacement tips for screw gun
3. Panel lifter (available through your Tate dealer)

Do not use screwdrivers, pliers or other tools to pry or lift panels.

GENERAL PRECAUTIONS

1. Be cautious not to inadvertently rotate pedestal heads and change height settings when panels are removed. Although pedestal heads have anti-rotation mechanisms, it is still possible to bump heads out of alignment.
2. Do not attempt to carry a panel by the lifter – the suction could break and allow the panel to fall from your hand.
3. After removing cut panels installed at walls and around columns, reinstall them exactly where they came from. Interchanging panels that were precisely cut for perimeter locations can cause interior panels to be tight or loose in the floor and also cause the floor to be out-of-square.

REMOVING FLOOR PANELS

It is good practice to remove panels only where immediate access is required and reinstall them as your work progresses. When a number of panels must be removed, do not take out more than six adjacent panels at once OR remove only every other panel in a row.

The first panel taken out must be pulled with a lifter. Adjacent panels can be removed with the lifter or by reaching underneath them and pushing upward. *Kneeling on the floor while removing and replacing panels may avoid back strain.*

In a cornerlock system, back the screws out so they disengage the pedestal heads (the screws can remain in the panel to prevent misplacement). Place the lifter near an edge of the panel and push on the handle to form suction. Lift the edge of the panel (as if opening a door) until its edge is above the adjacent panel, then remove it completely by hand. Lay the panel on the floor and release the suction by squeezing the release bar directly above the suction cups. Do not slide panels across laminated panels as this can damage tile.

Cornerlock screw remains in panel body to prevent loss

Removing (or reinstalling) a panel with suction cup lifter

REINSTALLING FLOOR PANELS

All but the last panel reinstalled can be seated on the understructure without a lifter. To reinstall a panel, sit one edge on the understructure and lower the other side as if closing a door. To reinstall a panel using a lifter, attach the lifter near an edge and lower that side into place (Fig. 5.2). In a PosiLock system, maneuver the panel as necessary to align its cornerlock holes align with the holes in the heads. Fasten the cornerlock screws so their heads are fully seated. **Use no more than 30 inch-pounds of torque.** Do not attempt to reposition a panel on the understructure by kicking it into place.

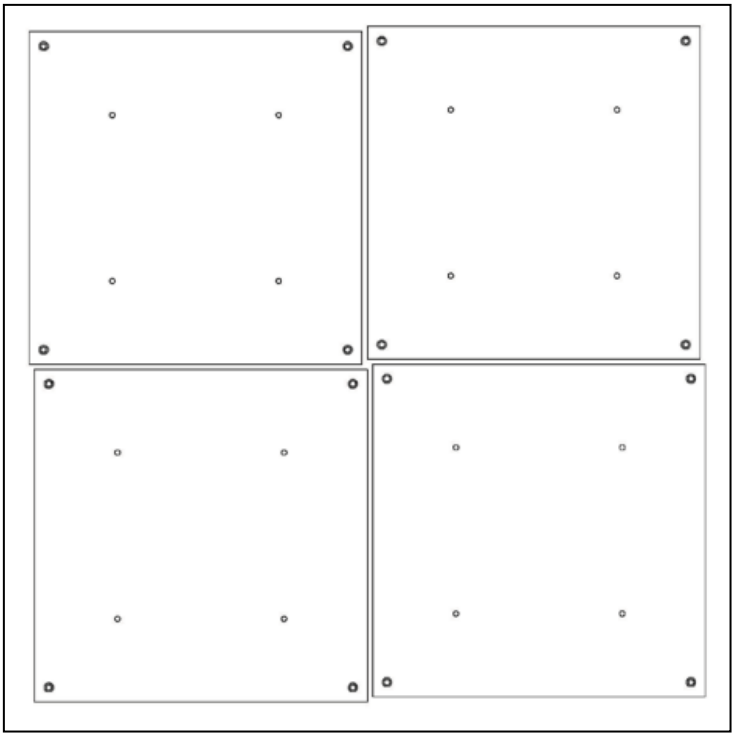
REMOVING PERFORATED PANELS

A perforated panel is lifted by a PERF lifter which is consists of a J-hook attached to a handle. If you don't have a PERF lifter you can remove a perforated panel by first removing an adjacent solid panel and reaching under to push the perforated panel upward. To use a PERF lifter, insert the hook through a hole on one side of the panel and lift that side until you can place your other hand under the panel to remove it completely. Do not attempt to lift a panel completely by the lifter or carry a panel with the lifter. Dampers for GrateAire and Perforated panels are adjusted from the top with a 5/32" hex tool (Tate provided).

PERF Panel Lifter

STRINGER SYSTEMS

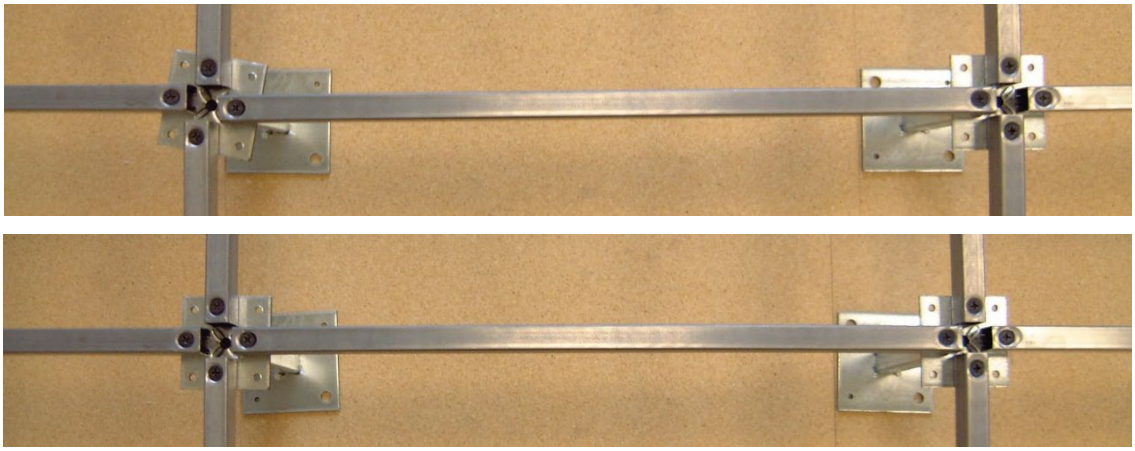
A stringer grid can become racked (out-of-square) when a group of panels is removed and the stringers are bumped, pulled, walked on, or incorrectly reinstalled when underfloor work is performed. These abuses will cause panels to be visibly out-of-square after they are put back into the grid (Fig. 5.5). Correcting a large out-of-square condition must be performed by a professional installer. Be aware that two-foot stringer systems are more susceptible to racking than four-foot stringer systems.



Panels out of square due to racking of stringer grid

Anyone performing underfloor work should adhere to these instructions to prevent stringer racking.

1. When working under the floor, remove panels only where immediate access is needed and reinstall them as your work progresses. The surrounding panels in the floor help to maintain grid squareness while underfloor work is performed.
2. Keep foot and rolling load traffic away from where panels and stringers have been removed. Nearby traffic can cause panel shifting and rotation of the stringer-head connections.
3. When removing stringers, remove only those stringers necessary for access and replace them as your work progresses from one area to another.
4. When reinstalling a stringer, make sure the pedestal heads at each end are square to one another before final tightening of the screws (Fig. 5.6).
5. Never pull electrical cables against the pedestals and stringers.
6. Don't walk on stringers or put loads on them when panels are removed from the floor.
7. When removing cut panels at the floor perimeter and around columns, reinstall each panel section exactly where it came from. Perimeter panels are precisely cut for each location – interchanging them can cause floors to become out-of-square, and also cause interior panels to become too tight or too loose.
8. Don't over-torque the stinger screws with your driver – use no more than 30 inch-pounds of torque.
9. Don't attempt to re-square the stringer grid by hitting stringers with a hammer or other objects – this can result in the formation of bumps on tops of the stringers that will cause panels to rock.



Top view: OUT-OF-SQUARE CONDITION – Pedestal head on left not square with head on right.

Bottom view: Stringers and heads are square

Maintenance of Floor Cavity and Diffusers

CLEANING THE FLOOR CAVITY

Office Areas

After the subfloor is cleaned of dirt and debris from construction, further accumulation will be minimal and can be removed with a shop vacuum. Since the cavity is enclosed, significant buildup may take several years to develop. The way to determine when cleaning is necessary is by occasionally inspecting the subfloor. It is estimated that the required frequency of cleaning is two to three years based on the rate of buildup that is observed. HEPA filtered vacuums are recommended for cleaning to prevent dust and dirt from being released into the air.

Data Centers / Computer Rooms

As a general rule of thumb, the floor cavity in a data center should be cleaned twice a year. A data center should always be cleaned with a HEPA filtered vacuum to prevent dust and dirt from mixing into the air during cleaning. Vacuums without HEPA filters will spray damaging dust and particulates into the room.

Perforated airflow panels and grates in computer rooms may need to be cleaned couple of times a year. This can be done by running a wide vacuum nozzle across the top and the underside of the panels. Perforated panels should be vacuum cleaned routinely and damped mopped as needed. Again, do not use excessive water.

Aluminum GrateAire panels, DirectAireAL, Steel DirectAire and Directional Perf panels should be vacuum cleaned routinely and may be cleaned with mild detergent and water. Do not use excessive water damp wipe with a cloth.

Cable cutouts in floor panels should be sealed with grommets or trim & seal components to prevent entry of dust and dirt into the cavity. These are available through your Tate dealer.

REMOVING LIQUID FROM THE FLOOR CAVITY

If liquid enters the floor cavity by spillage or water pipe leakage, vacuum extraction is the most effective way of removing it. The drying process can be accelerated with dehumidifiers, fans, and/or heaters. Extraction and drying should occur as soon as possible and no more than 48 hours after the event. For areas subject to excessive moisture or potential water leakage, water leak detection systems made for use in access floor cavities are available. These systems monitor the subfloor in places where water leakage may otherwise go undetected.

CLEANING AIR DIFFUSERS, AIR TERMINALS

Dirt and debris that fall into floor air diffusers will be collected by the baskets beneath the diffuser cover. Grilles and air diffuser baskets may be removed and cleaned using a soft cloth soaked with warm water and a mild cleaner and dried with a similar cloth.

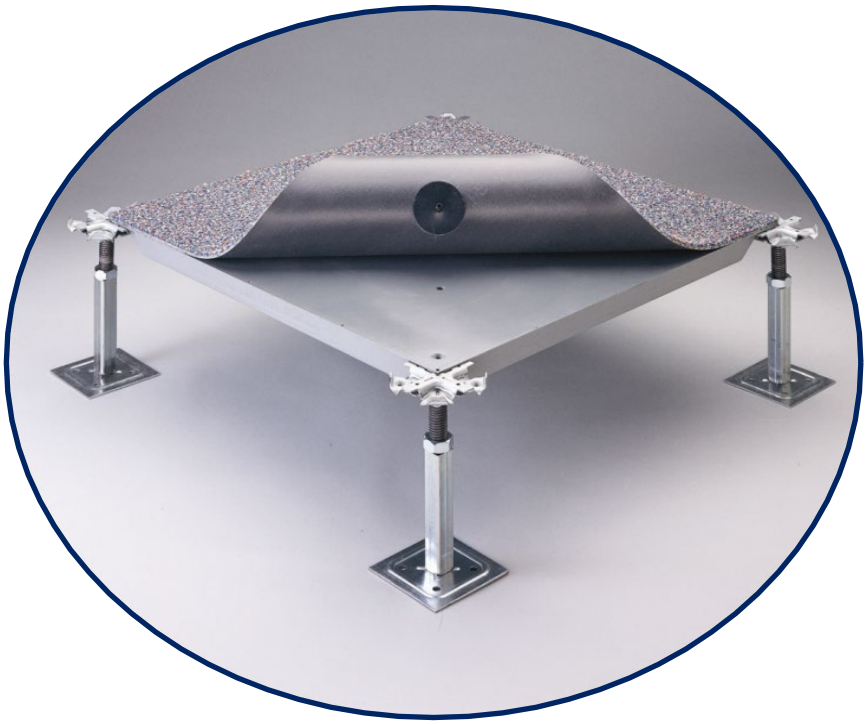
Floor Coverings

PosiTile®

PosiTile carpet tiles are precisely cut to fit the modular 2'x2' size of Tate's ConCore® access floor panels. Each tile has positioning buttons that precisely align with holes in the top of each floor panel. This eliminates the need for adhesives, except at perimeter locations.

Installation

When installing carpet tiles, the access floor surface should be free of dirt, debris and excessive dust before installing PosiTile® carpet tile.



Perimeter Tiles

Carpet tiles can be easily cut to fit perimeter locations and areas around columns. If positioning buttons are eliminated when tile is cut, adhere carpet with a releasable adhesive or double faced tape.

Conductive and Static Dissipative

The access floor covered with either conductive or static dissipative vinyl tile is designed for years of service by following these guidelines:

Damp Mopping for Conductive and Static Dissipative Vinyl Tile

When light soiling is widespread, use this damp- mopping procedure:

1. Sweep or vacuum floor thoroughly.
2. Damp-mop with warm water and mild multipurpose ammoniated floor cleaner.
3. Dip sponge mop into warm water, wring out thoroughly, and push sponge across the floor, pressing hard enough to loosen surface dirt.
4. Damp-mop a small area at a time, wringing the sponge out frequently.
5. When damp-mopping a large floor, change water frequently.
6. A sponge mop with a nylon scrubbing pad attached to the front edge is recommended.
7. Rinsing is important. Although detergent directions may that state rinsing is unnecessary, any detergent film left on a floor will attract dirt.
8. Ideally, use separate sponge mops for cleaning and rinsing.

DO:

1. Keep floor clean by damp-mopping with a neutral cleaner.
2. Protect from tracked in sand and chemicals by providing mats at entrances.
3. Rotate panels between high- and low-traffic areas.
4. Use a diluted commercial stripping agent on heavily soiled areas.

DO NOT:

1. Flood with liquid, or use anything other than a damp mop. Large amounts of water can weaken adhesive and cause delamination.
2. Use strong abrasives or scrapers to remove stains.

Standard High Pressure Laminate

The access floor covered with high pressure laminate floor tile is designed for years of service with a minimum of care and cleaning. Gain maximum life from this floor surface by following these guidelines:

Damp Mopping for Standard High Pressure Laminate Floor Tile

When light soiling is widespread, use this damp- mopping procedure:

1. Sweep or vacuum floor thoroughly.
2. Damp-mop with warm water and mild multipurpose ammoniated floor cleaner.
3. Dip sponge mop into warm water, wring out thoroughly, and push sponge across the floor, pressing hard enough to loosen surface dirt.
4. Damp-mop a small area at a time, wringing the sponge out frequently.
5. When damp-mopping a large floor, change water frequently.
6. A sponge mop with a nylon scrubbing pad attached to the front edge is recommended.
7. Rinsing is important. Although detergent directions may that state rinsing is unnecessary, any detergent film left on a floor will attract dirt.
8. Ideally, use separate sponge mops for cleaning and rinsing.

DO:

1. Keep floor clean by damp-mopping with a mild multi- purpose ammoniated floor cleaner.
2. Protect from tracked in sand and chemicals by providing mats at entrances.
3. Rotate panels between high- and low-traffic areas.
4. Use a non-flammable organic solvent on soiled spots.

DO NOT:

1. Use wax seal—it is not necessary.
2. Flood with liquid, or use anything other than a damp mop. Large amounts of water can weaken adhesive and cause delamination.
3. Use strong abrasives or scrapers to remove stains.

Panel Cutting Procedures

Guidelines for Cutting Panels

1. When it is necessary to penetrate and/or modify the floor panels, follow these guidelines:
2. Use proper equipment and follow the equipment manufacturer's recommended safety precautions.
3. Use protective trim around exposed edges for cutouts within a panel and cutouts through the panel edge.

Rectangular Cutouts, External & Internal

Panels with cutouts extending to the edge of the panel can be cut with a handsaw. Cutouts inside the perimeter of the panel can be cut with a heavy-duty handheld reciprocating saw. A cutout should be at least 3 inches from the panel edge to maintain a reasonable degree of structural integrity. Use bi-metal saw blades with approximately 14 teeth per inch. (Cutout sizes for Tate accessories are shown in figure 15).

Round Cutouts

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. With 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, then deburr all sharp edges.

For a rectangular inside cutout:

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

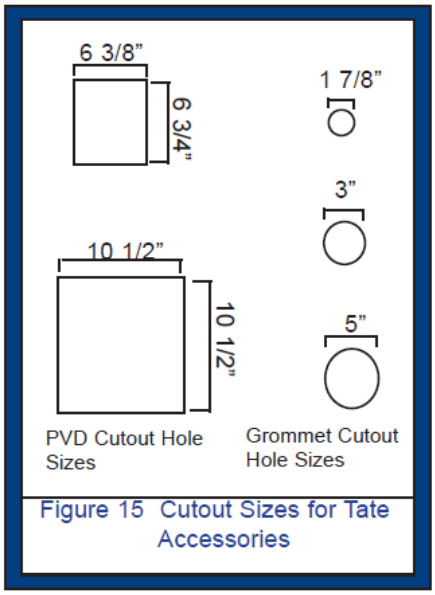


Figure 15 Cutout Sizes for Tate Accessories

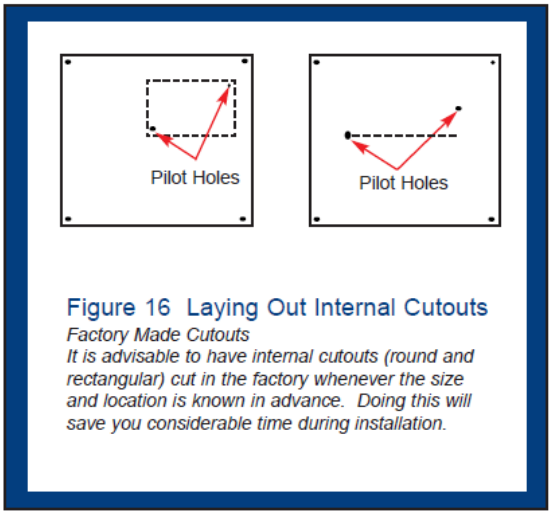


Figure 16 Laying Out Internal Cutouts

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.

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 include universal cutout trim in 4-foot lengths, molded corners and screws. An optional foam plenum seal is available to seal the opening.

Before cutting the trim, note how the molded corners hold the trim in place. Cut the vinyl trim pieces straight at each end so that the ends can fit under the corners (figure 17).

Secure each molded corner in place with a screw fastened into the panel. If the cutout extends to the edge of the panel, attach the trim near the edge of the panel without molded corners. To do this, attach the straight piece directly to the panel with a pop (blind) rivet or screw. If a screw is used, countersink the screw in the trim piece.

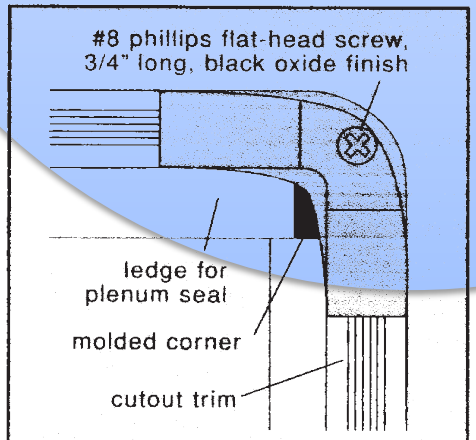


figure 17 Installing protective trim around cut edges

Safety Requirements for Panel Cutting

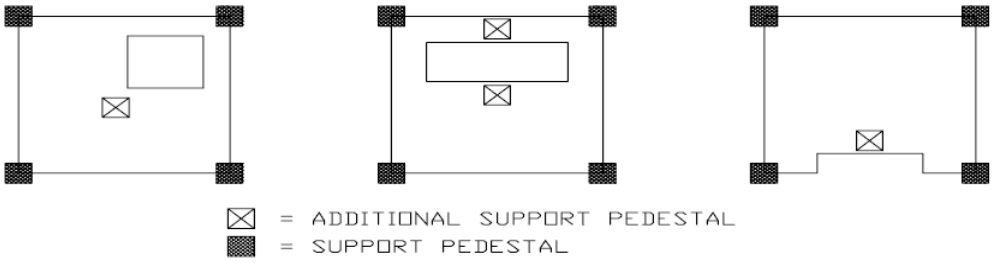
When using a hand-held heavy duty (industrial) reciprocating saw, follow the guidelines below:

- Use a bench or worktable to cut the panels, i.e. a B&D Workmate bench with clamps.
- Work in a well-lighted area
- Be sure tools are properly grounded and dry. Use the correct saw blade (14 to 20 teeth per inch metal cutting blade).
- Be sure the entry hole is large enough to start the saw blade without binding.
- Use common sense to avoid personal injury. Always use safety equipment including:
  - ✓ Ear protection

- ✓ Safety glasses and full face shield (clear plastic)
- ✓ Long sleeve shirt or sleeve protectors
- ✓ Lightweight work gloves for protection from sharp metal edges and hot saw dust)
- ✓ Steel toe safety shoes or boots
- ✓ Dust Mask (NIOSH APPROVED)
- ✓ Material Safety Data Sheet

Supporting a Cut Panel:

When it is necessary to retain the design load capacity of a panel after it has been cut, an effective solution is to use additional pedestal supports. Guidelines for the number and location of additional supports are outlined below:



Electrical Guidelines

Floor Static Control for Computer Rooms

Standard HPL coverings are classified as antistatic coverings and provide the necessary static protection for most computer rooms. According to industry standards, to ensure a proper balance between insulation and conductivity in anti-static floor coverings, the electrical resistance range of the floor covering should range from 150,000 to 20 billion ohms. Standard high-pressure laminates offered by Tate adhere to these guidelines.*

Static buildup and discharge can be minimized by

- providing a conductive path to ground from a metallic raised floor structure, including the metal panels;
- ensuring that a maximum resistance for the flooring system is 2×10^{10} ohms, measured between the floor surface and the building (or an applicable ground reference. Flooring material with a lower resistance will further decrease static buildup and discharge. For safety, the floor covering and flooring system shall provide a resistance of not less than 150 kilohms (150,000 ohms) when measured between any two points on the floor space 1m (3 ft) apart.

Maintenance of antistatic floor coverings should follow the individual supplier's recommendations.

**Based on IBM Resistivity Range, from the IBM General Information Manual, Second Edition, publication numbers GC22-7072-1, dated January 1987*

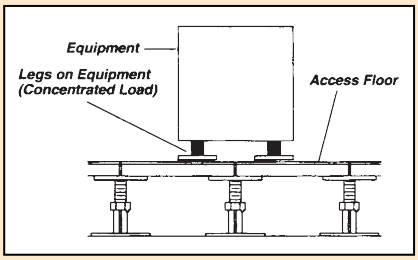
Test Standards

There are no industry standards for access floor loading performance. However,The Ceilings & Interiors Systems Construction Association (CISCA) has published *Recommended Test Procedures for Access Floors* for concentrated, ultimate, rolling, stringer, pedestal axial and pedestal overturning moment loads. Tate utilizes CISCA guidelines in the development of all test procedures.

Static Loads

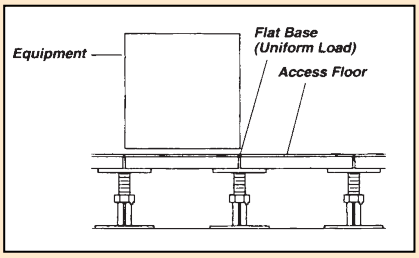
Design

These loads are applied on a small area of the panel surface, i.e. from a desk leg or computer frame. The concentrated load is applied on a 1"x1" indentor, and deflection is measured at the top surface under the load. Permanent set (rebound) is measured after the load is removed.



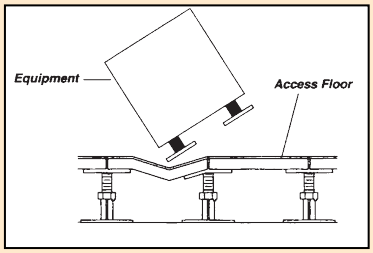
Uniform

Uniform loads, expressed in pounds per square foot, are applied over the entire surface of the panel, i.e. a file cabinet.



Ultimate

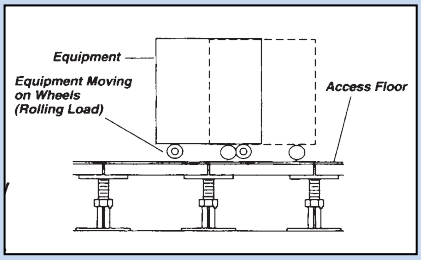
These loads are reached when the panel has failed structurally and cannot accept additional load.



Dynamic Loads

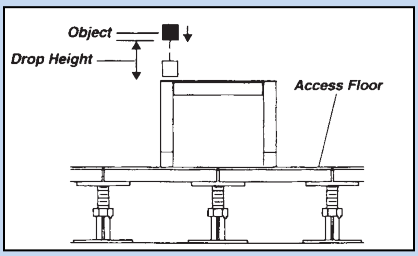
Rolling

These loads are applied by wheeled vehicles carrying loads across the floor, i.e. chair casters, pallet jacks, and electronic mail carts. Dynamic loads are defined by wheel size and hardness, weight of vehicles, contents, and number of passes.



Impact

Impact loads are achieved by dropping objects on the floor, i.e. a box of computer paper dropped from waist height. Impact loads are defined by weight, impact surface area and distance dropped.



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