

TecBase Access Flooring

Application Guide

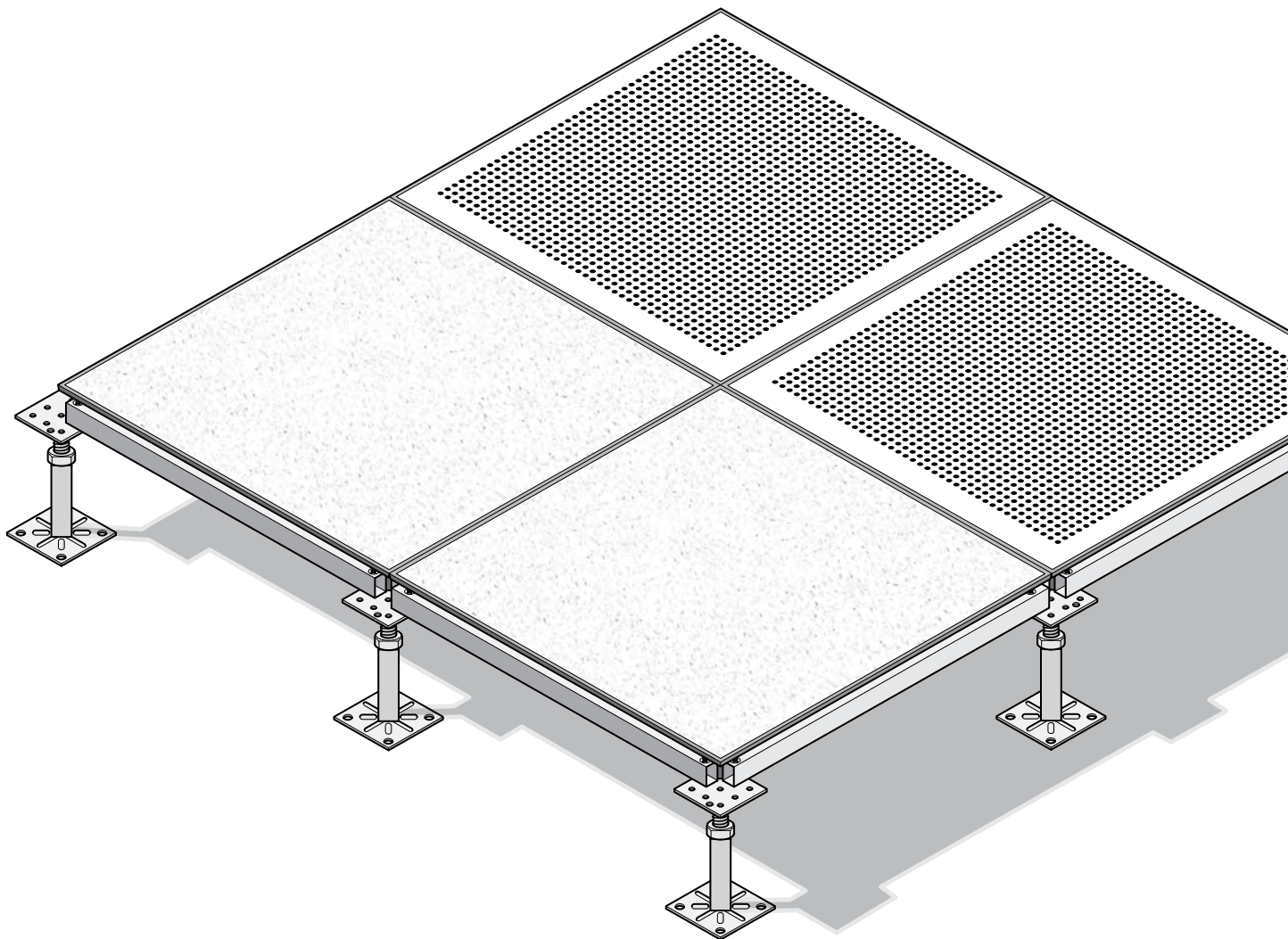


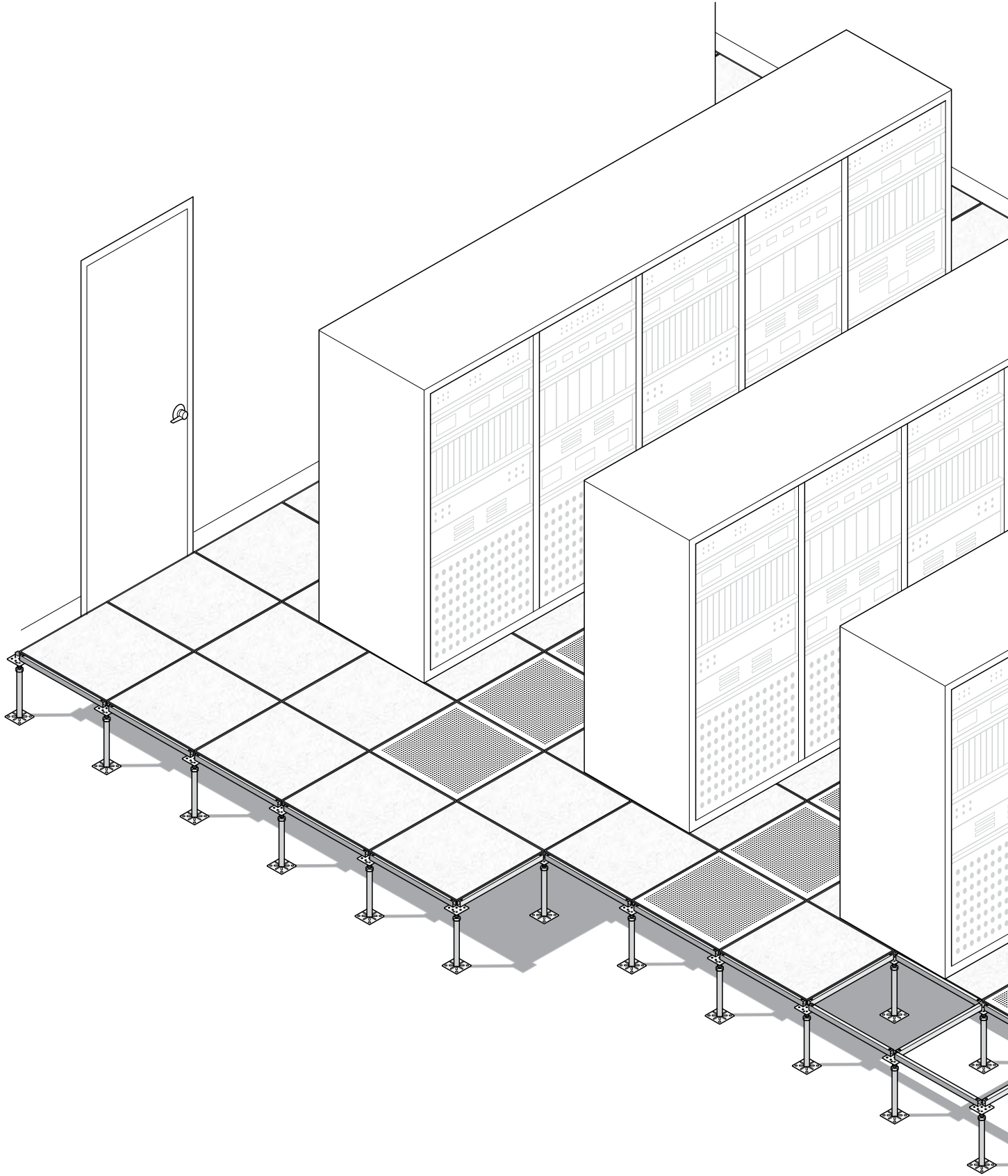
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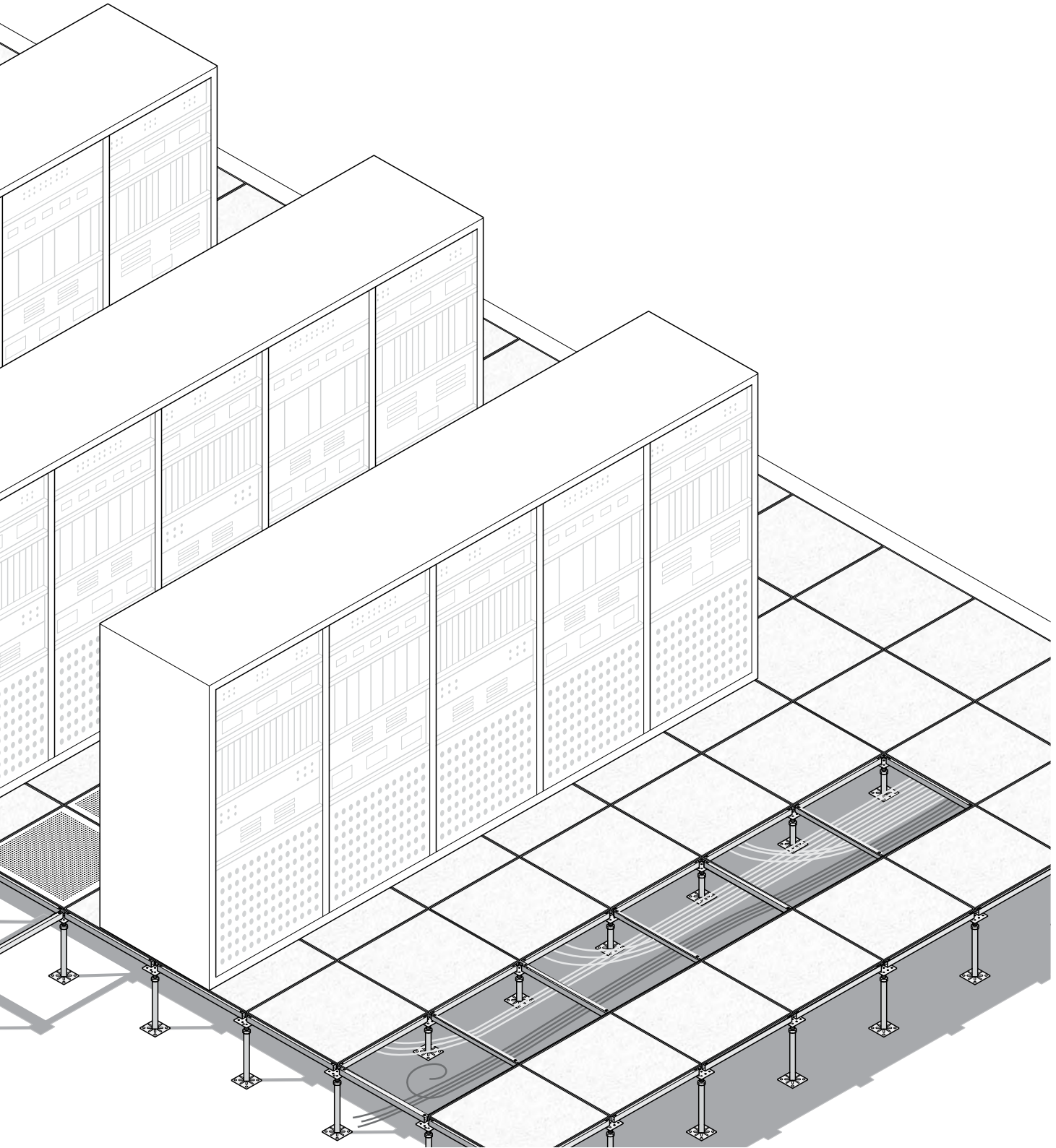
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TecBase

Access Flooring for Computer and Equipment Rooms, Communication Facilities, and Data Centers

The TecBase access floor system is the ideal solution for equipment rooms, data centers, and other mission-critical facilities. Utilizing a cementitiously filled 64-dome design, solid TecBase panels are offered in a range of performance levels.

The TecBase system also offers a high-performance perforated panel which is precision engineered for efficient air delivery. The airflow panel is constructed from a welded grid frame and top sheet assembly perforated to create a 23.6% open area. At 0.1 inches water gauge pressure, it produces 14% more CFM than similar airflow panels.

Standard Panel Features

- Strength ratings: concentrated load of 1,250 lbs., 1,500 lbs., and 2,000 lbs.
- Proven performance: TecBase's classic cementitiously filled 64-dome design has proven itself in installations worldwide for more than 30 years.
- Cementitious fill provides added strength and sound control.
- Panels coated with epoxy enamel paint to resist corrosion.
- Non-combustible.

Airflow Panel Features

- Strength rating: concentrated load of 1,500 lbs.
- True 23.6% open area top sheet.
- 0.1 inches water gauge pressure produces 14% more CFM than similar airflow panels.
- Welded grid frame and perforated top sheet assembly.
- Powder coated finish.
- Non-combustible.

Understructure Features

- Standard pedestals for finished floor heights from 6" and above.
- Seismic pedestals for finished floor heights from 6" and above.
- Pedestal base is steel with hot-dipped galvanized finish.
- Pedestal head is steel with yellow zinc dichromate finish.
- Pedestal head designed to accept bolted stringers (rigid grid).
- Vertical height adjustment of ± 1 " (2.54 mm) easily accommodates irregular subfloors.

Complementary Products and Systems

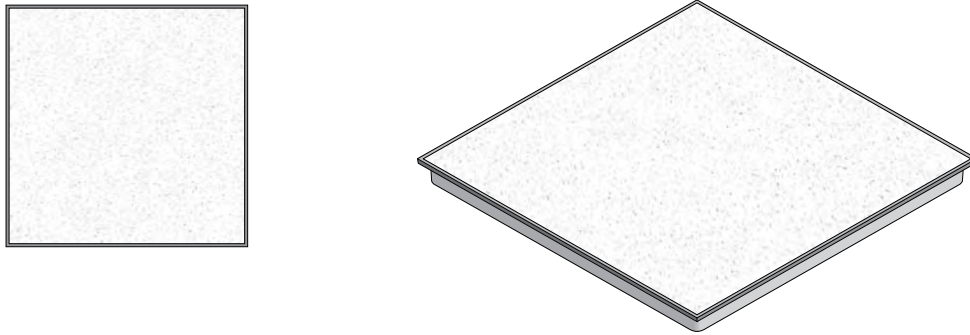
- Haworth grilles.
- Haworth panel lifting tools.
- TecBase ramp components.

Typical Configurations

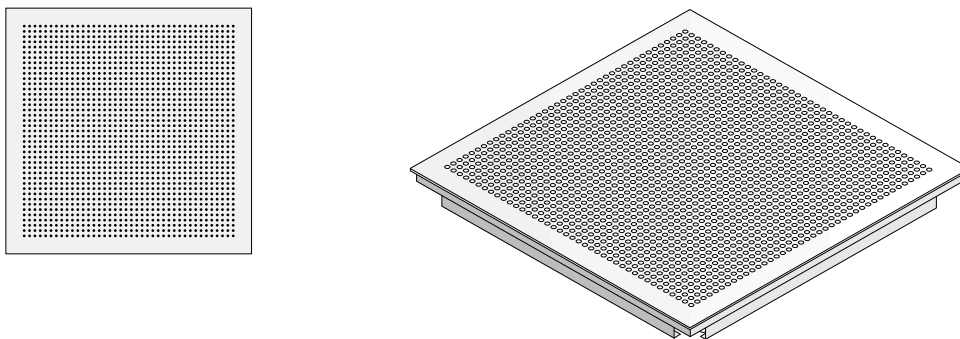
- TecBase panel covered with high-pressure laminate, gravity held in a rigid grid understructure.

TecBase Panels

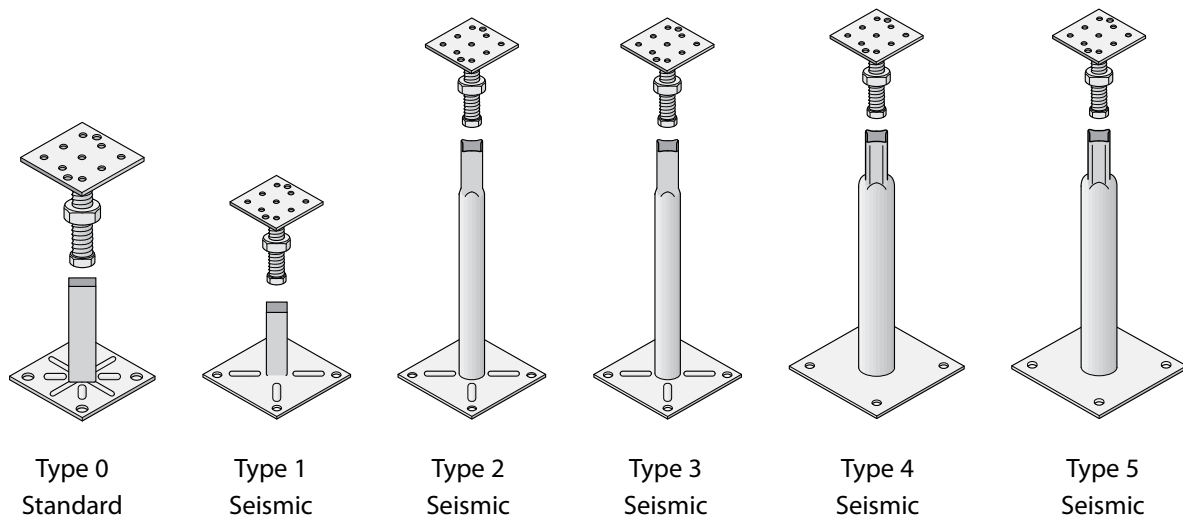
TecBase 1250, 1500, 2000 Panel: Top View



TecBase Airflow Panel: Top View

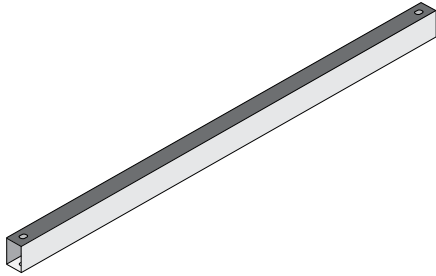


TecBase Pedestal Heads and Bases

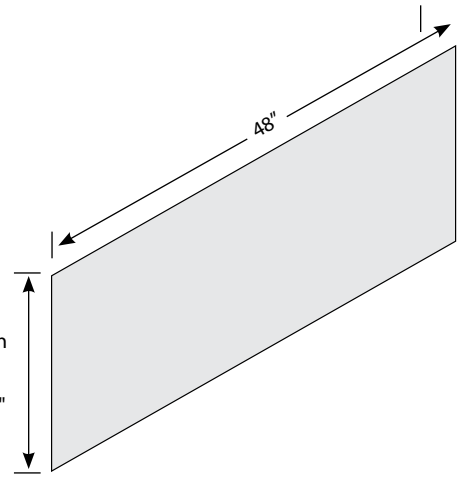


Note Pedestal bases and heads specified separately.

Accessories

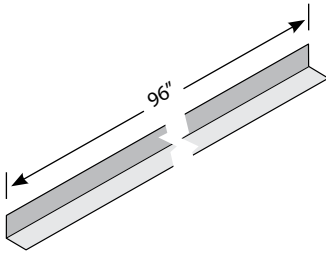


Steel Stringer with Gasket – 2' and 4'

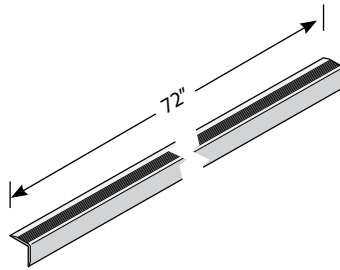


Heights can be 8", 12", 18" and 24"

Steel Fascia Plates



Steel Fascia Bottom Angle



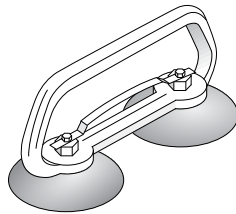
Aluminum Fascia Top Angle



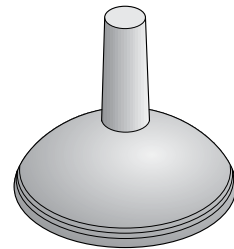
Conductivity Clip



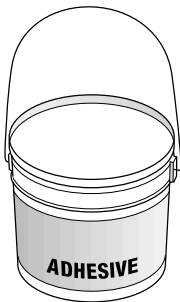
Small Single-Cup Panel Lifter



Double-Cup Panel Lifter

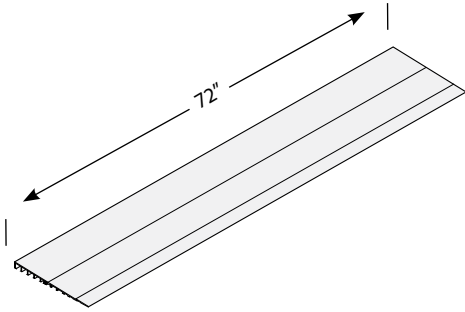


Large Single-Cup Panel Lifter

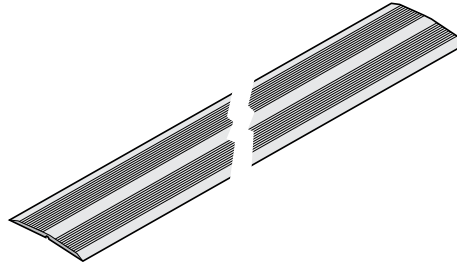


Standard or High Strength Adhesive

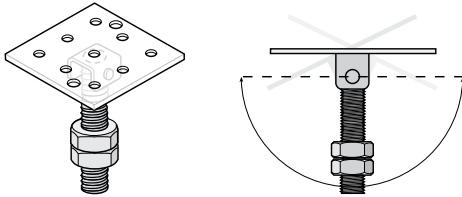
Ramp Accessories



Ramp Shoe



Ramp Threshold

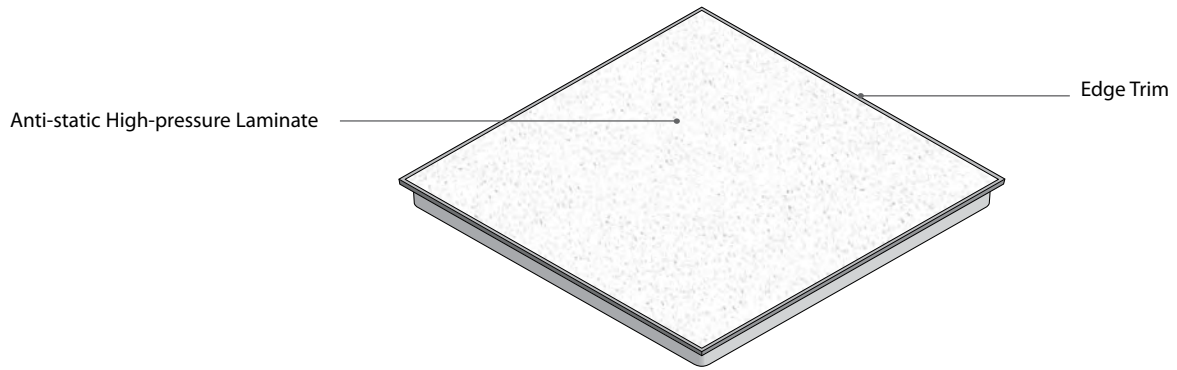


Swivel-head Pedestal for Ramps

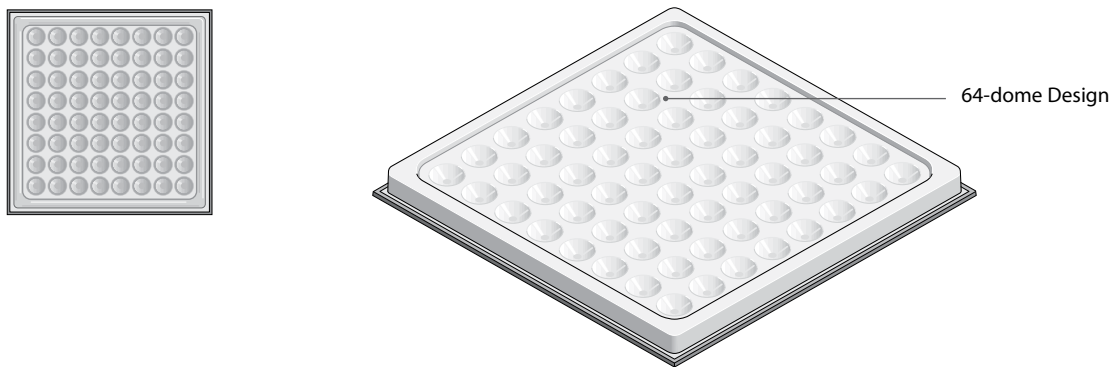
TecBase Panels

Access Panels are modular components that form the top surface of a TecBase floor system. They are installed directly on top of the stringer and are supported by the pedestal base. The access panel utilizes a cementitious filled 64-dome design offered in a range of performance levels. The access panel can be specified with a laminate or vinyl surface.

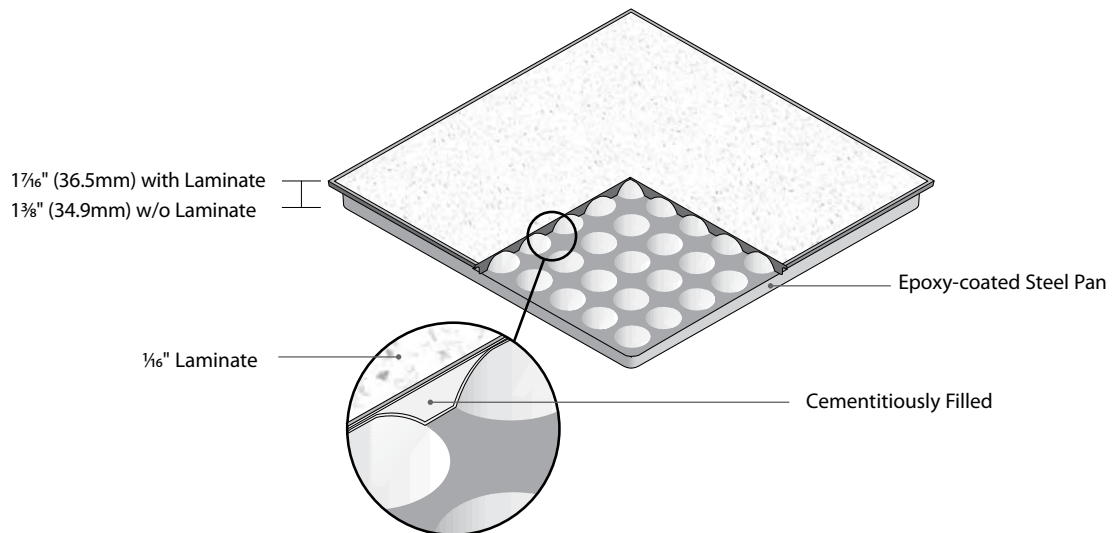
TecBase 1250, 1500, 2000 Panel: Top View



TecBase 1250, 1500, 2000 Panel: Bottom View



TecBase 1250, 1500, 2000 Panel: Cutaway View



General Information

Construction:	• Classic welded steel construction with a cementitiously filled 64-dome design
Panel size — Nominal:	• 24" x 24" (610mm x 610mm)
Panel thickness:	• TecBase 1250/1500/2000 – 1 ⁷ / ₁₆ " (36.5mm) with high pressure laminate (HPL) • TecBase 1250/1500/2000 – 1 ³ / ₈ " (34.9mm) bare
Panel weight*:	• TecBase 1250 – 37 lbs. (16.78 kg) bare finish • TecBase 1500 – 40 lbs. (18.14 kg) bare finish • TecBase 2000 – 46 lbs. (20.86 kg) bare finish
System weight:	• TecBase 1250 – 12 lbs./ft ² (5.44 kgs/m ²) bare finish • TecBase 1500 – 13.25 lbs./ft ² (6.35 kgs/m ²) bare finish • TecBase 2000 – 14 lbs./ft ² (5.16 kgs/m ²) bare finish
Finished floor height:	• 6" to 30" (152mm x 762mm) – Other heights available
Panel finish:	• Bare • Anti-static dissipative high-pressure laminate with integral trim • Anti-static dissipative high-pressure laminate with captured trim • Anti-static dissipative vinyl with optional vinyl trim • Conductive vinyl with optional vinyl trim • Other surfaces available by special order
Fire resistance:	• Non-combustible

Panel Options

- Full access panel is the standard panel used for the majority of area in a TecBase flooring installation.
- High performance airflow panel used to cool high-density computer equipment (see page 12).

Understructure Options

- Understructure is available from 6" (152mm) to 30" (762mm) finished floor heights.
- One pedestal head addresses field and perimeter applications.
- Seismic options are also available.
- For non-standard pedestal options, please contact your Haworth representative.
- Stringers are available in 2' (610mm) and 4' (1219mm) lengths.

Companion Products and Systems

- Haworth furniture and wall systems.

TecBase Panel Performance Ratings**

PANEL	DYNAMIC LOAD RATING		STATIC LOAD RATING	
	ROLLING 10-PASS	ROLLING 10,000-PASS	CONCENTRATED	ULTIMATE
TecBase 1250* with stringer	1,000 lbs.	800 lbs.	1,250 lbs.	>4,800 lbs.
TecBase 1500* with stringer	1,250 lbs.	1,000 lbs.	1,500 lbs.	>4,800 lbs.
TecBase 2000* with stringer	1,500 lbs.	1,200 lbs.	2,000 lbs.	>4,800 lbs.

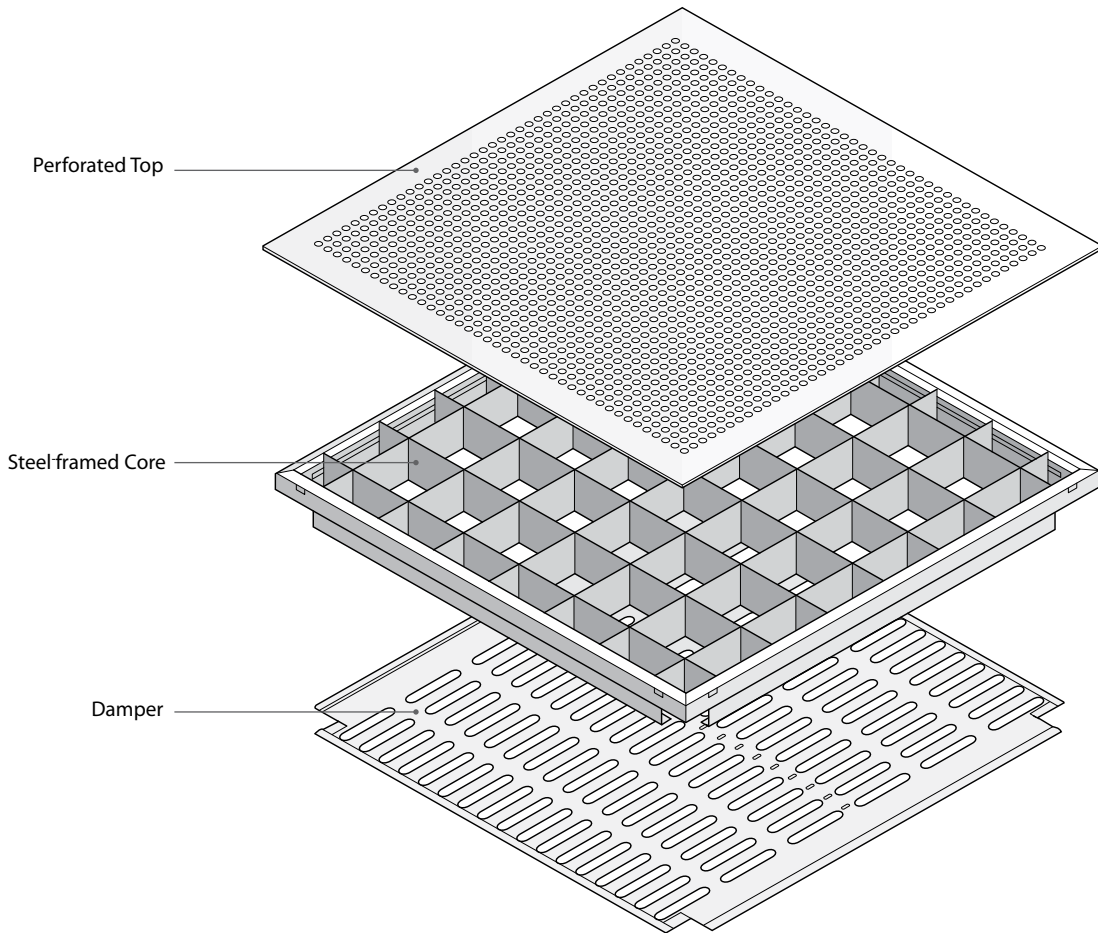
*At 12" finished floor height with stringers and without floor coverings.

**10-pass and 10,000-pass rolling load ratings allow for maximum 0.040 permanent set. Rolling, concentrated, and ultimate concentrated load tests performed according to "Recommended Test Procedures for Access Flooring" as established by the Ceiling and Interior Systems Construction Association (CISCA).

Link For detailed information on testing, please see pages 18-19.

TecBase Airflow Panels

The airflow panel is used to cool high-density computer equipment typically found in a server room, data center, or telecommunications center. The airflow panel is constructed from a welded grid frame and top sheet assembly perforated to create a 23.6% open area. At 0.1 inches water gauge pressure, it produces 14% more CFM than similar airflow panels.



General Information

Construction:	• Classic welded steel frame and top sheet
Panel size — Nominal:	• 24" x 24" (610mm x 610mm)
Panel thickness:	• TecBase 1500 Airflow Panel – 1 $\frac{1}{16}$ " (36.5mm) with high pressure laminate (HPL) • TecBase 1500 Airflow Panel – 1 $\frac{3}{8}$ " (34.9mm) bare
Panel weight*:	• TecBase 1500 Airflow Panel – 30.0 lbs. (4.54 kgs) with HPL and damper
System weight:	• TecBase 1500 Airflow Panel – 8.0 lbs./ft ² (4.54 kgs/m ²) with HPL and damper
Finished floor height:	• 6" to 30" (152mm x 762mm) – Other heights available
Panel finish:	• Bare • Anti-static dissipative high-pressure laminate with integral trim • Anti-static dissipative high-pressure laminate with captured trim • Anti-static dissipative vinyl with optional vinyl trim • Conductive vinyl with optional vinyl trim • Other surfaces available by special order
Fire resistance:	• Non-combustible

Panel Options

- Damper

Understructure Options

- Understructure is available from 6" (152mm) to 30" (762mm) finished floor heights.
- One pedestal head addresses field and perimeter applications.
- Seismic options are also available.
- For non-standard pedestal options, please contact your Haworth representative.
- Stringers are available in 2' (610mm) and 4' (1219mm) lengths.
- Shims may be required when a $\frac{1}{16}$ " laminate airflow panel will be used next to a $\frac{1}{8}$ " HPL on solid standard panels.

Companion Products and Systems

- Haworth furniture and wall systems.

TecBase Airflow Panel Performance Ratings**

PANEL	DYNAMIC LOAD RATING		STATIC LOAD RATING
	ROLLING 10-PASS	ROLLING 10,000-PASS	CONCENTRATED
TecBase 1500 Airflow* with stringer	1,000 lbs.	650 lbs.	1,500 lbs.

*At 12" finished floor height with stringers and without floor coverings.

**10-pass and 10,000-pass rolling load ratings allow for maximum 0.040 permanent set. Rolling, concentrated, and ultimate concentrated load tests performed according to "Recommended Test Procedures for Access Flooring" as established by the Ceiling and Interior Systems Construction Association (CISCA).

TecBase Pedestal Heads and Bases

Pedestal bases are used to support stringers, thereby creating a rigid grid and allowing panels to be gravity held. There are six pedestal base offerings: Type 0, Type 1, Type 2, Type 3, Type 4, and Type 5. Type 0 is the standard pedestal base and Types 1-5 are for accommodating varying seismic regions. Pedestal bases are specified separately from the pedestal heads, but all bases utilize the same pedestal heads — either the standard head or swivel-head.

Construction

- Pedestal heads are made of steel with yellow zinc dichromate finish.
- Pedestal bases are made of hot-dipped galvanized steel and fillet welded.

Pedestal Adjustment

- Pedestals allow for finished floor heights from 6" to 30"; additional heights available.
- Pedestal assemblies provide an adjustment range of $\pm 1"$ (25mm), adjustable at $\frac{1}{4}"$ (0.4mm) increments.

Head Options (Specified Separately)

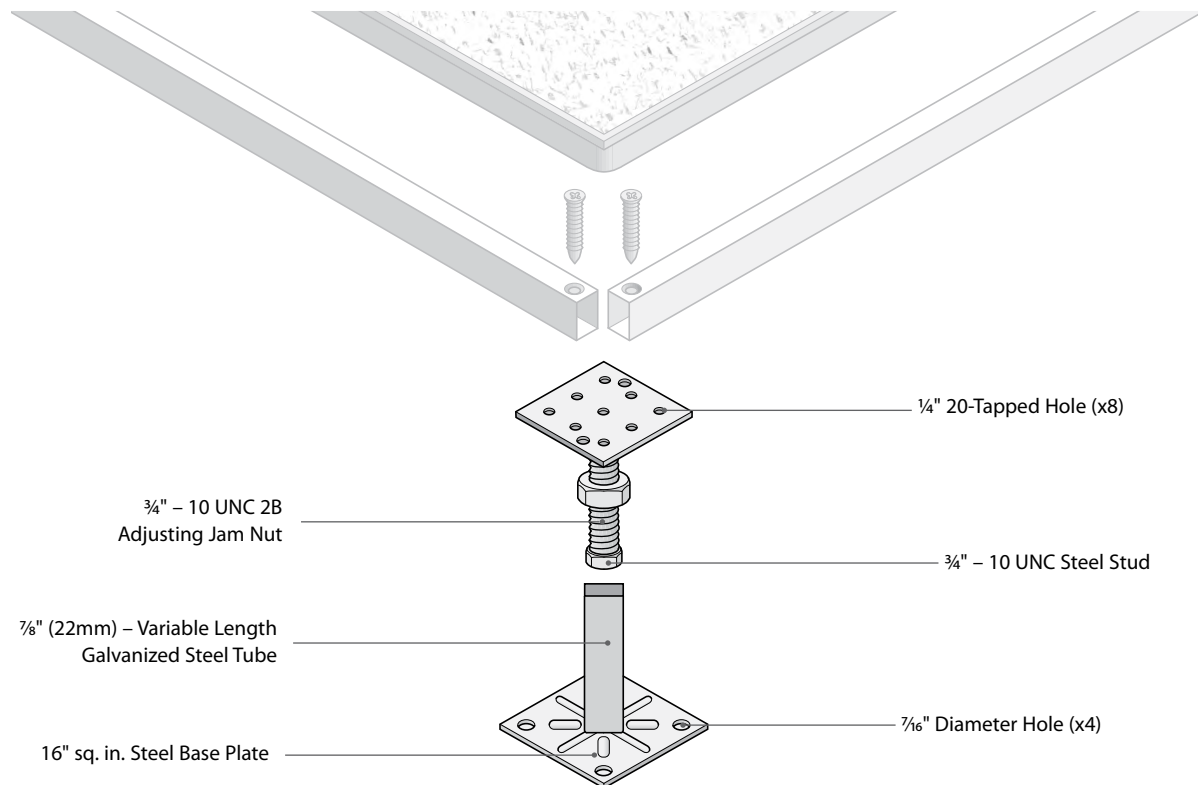
- Pedestal heads are designed to work in both perimeter and field applications.
- Bases are for use with standard pedestal heads with $\frac{3}{4}"$ (19mm) diameter steel studs.
- Swivel-head pedestals are available for ramp angles.

Stringers

- 2' and 4' stringers attach to pedestal heads with fasteners.

Conductivity

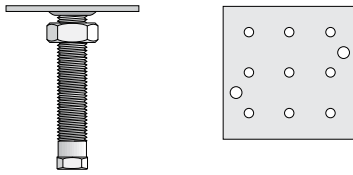
- Conductivity clips are required for TecBase when panel to pedestal resistance must be 10 ohms or less.



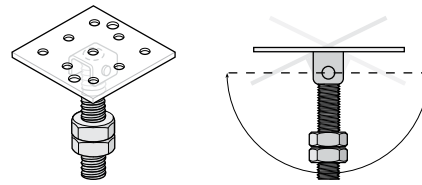
Notes

- For non-standard pedestal options, please contact your Haworth representative.
- Stability and Load Rating: To obtain overturning moment and axial load test values please contact your Haworth representative.
- Pedestal bases and heads are specified separately.

TecBase Pedestal Heads

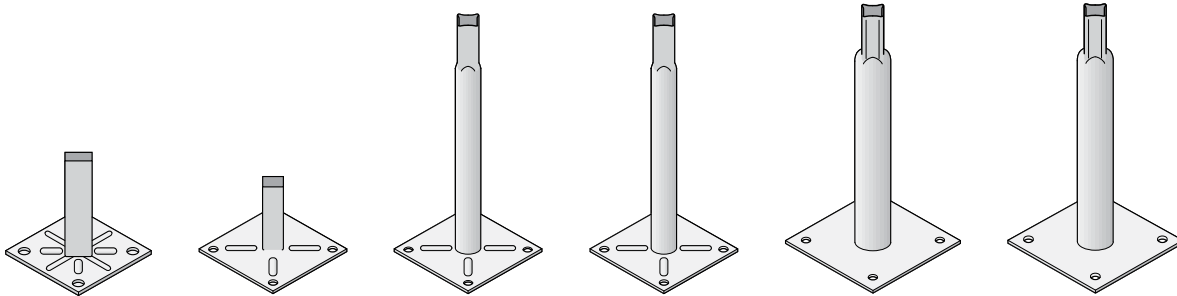


TecBase Pedestal Head Side and Top View



TecBase Swivel-head Pedestal

TecBase Pedestal Bases



Type 0
Standard

Type 1
Seismic

Type 2
Seismic

Type 3
Seismic

Type 4
Seismic

Type 5
Seismic

BASE TYPE	FINISHED FLOOR HEIGHT RANGE	MIN. FINISHED FLOOR HEIGHT	SQUARE BASE DIMENSIONS	TUBE DIAMETER (OUTSIDE)	TUBE LENGTH	PEDESTAL ADJUSTMENT	ADJUSTMENT INCREMENTS
Type 0	6" to 30" (152mm to 762mm)	6" (152mm)	4" x 4" x .0785" (102mm x 102mm x 2mm)	0.875" square (22mm)	3" to 27" (76mm to 686mm)	±1" (±25mm)	1/64" (0.4mm)
Type 1	6" to 30" (152mm to 762mm)	6" (152mm)	4" x 4" x 0.188" (102mm x 102mm x 5mm)	0.875" square (22mm)	3" to 27" (76mm to 686mm)	±1" (±25mm)	1/64" (0.4mm)
Type 2	12" to 30" (305mm to 762mm)	12" (305mm)	4" x 4" x 0.0994" (102mm x 102mm x 2.5mm)	1.163" (29.54mm)	9" to 27" (229mm to 686mm)	±1" (±25mm)	1/64" (0.4mm)
Type 3	12" to 30" (305mm to 762mm)	12" (152mm)	5" x 5" x 0.188" (127mm x 127mm x 5mm)	1.163" (29.54mm)	9" to 27" (229mm to 686mm)	±1" (±25mm)	1/64" (0.4mm)
Type 4	12" to 30" (305mm to 762mm)	12" (305mm)	6" x 6" x 0.188" (152mm x 152mm x 5mm)	1.500" (38.1mm)	9" to 27" (229mm to 686mm)	±1" (±25mm)	1/64" (0.4mm)
Type 5	12" to 30" (305mm to 762mm)	12" (305mm)	6" x 6" x .25" (152mm x 152mm x 6mm)	1.500" (38.1mm)	9" to 27" (229mm to 686mm)	±1" (±25mm)	1/64" (0.4mm)

- Notes**
- The Engineer of Record will determine what type of pedestal base is necessary for the project. The use of either the standard or specified seismic pedestal bases is calculated on several factors, including but not exclusive to: building code, live load, partition load, finished floor height, height of roof above grade, height of subfloors above grade, seismic zone factor, distance to known seismic source, soil profile, and site classification. Please have the Flooring Contractor contact Haworth for the "Access Floor Seismic Calculation Request" form for actual pedestal base determination factors.
 - The ability of the TecBase system to resist gravity, overturning, seismic loads, or to adequately transmit loads to the building structure must be consistent with the load capacities defined in this guide, or must be reviewed by Haworth. A detailed review by a design or engineering professional, registered in the jurisdiction of construction may also be required.
 - Pedestal bases and heads are specified separately.

TecBase Standard Rigid Grid Understructure

TecBase panels drop into a rigid grid formed by either two or four foot stringers; the grid pattern used depends on the application. Each pedestal head supports four stringers and four panel corners.

Construction

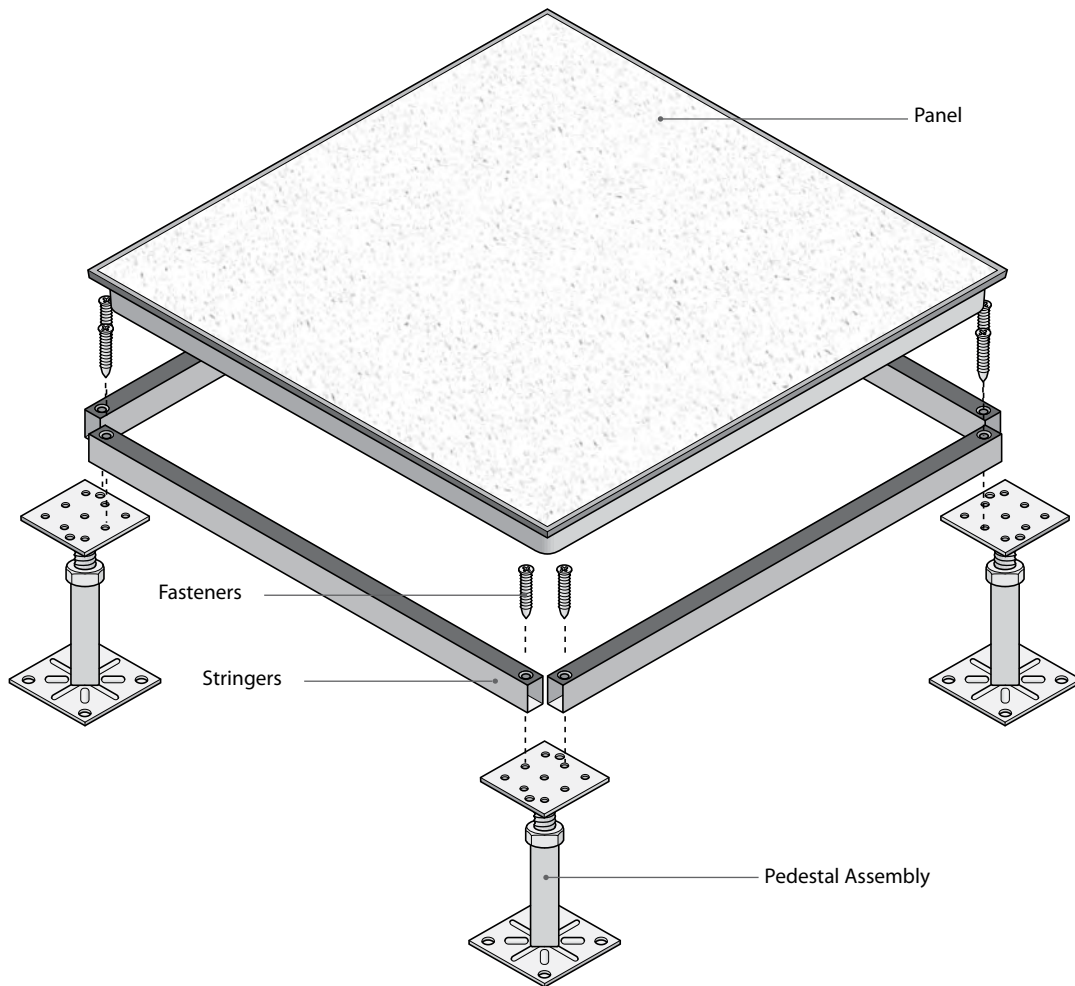
Stringers are roll formed 18 gauge yellow zinc dichromate steel.

Load Rating

Stringers can support a concentrated load of 300 lbs. (136 kgs) at a center of a 24" (610mm) span without exceeding a 0.010" (0.25mm) permanent set.

Grid Pattern Options

Stringer grid patterns are 2' x 2' (610mm x 610mm) or 4' x 4' (1219mm x 1219mm).



Note Pedestal bases and heads are specified separately.



TecBase Performance Ratings

Haworth Access Floors are designed to meet or exceed industry standards for rolling, concentrated, and ultimate concentrated load tests performed according to the "Recommended Test Procedure for Access Flooring" as established by the Ceiling and Interior Systems Construction Association (CISCA).

TecBase 1250 Panel Performance Ratings

Rolling Load

- 1,000 lbs. applied through a 3" (76mm) dia. x 1³/₁₆" (46mm) wide caster for 10 cycles over the same path with a maximum of .040 (1mm) top surface permanent set with edge support stringers.
- 800 lb. applied through a hard rubber-surfaced wheel 6" (152mm) dia. x 2" (51mm) wide for 10,000 cycles over the same path with a maximum of .040" (1mm) top surface permanent set with edge support stringers.

Impact Load Rating

150 lb. load dropped from 36" (914mm) onto a one-inch square indenter shall not cause system failure with edge support stringers.

Concentrated Load Rating

1,250 lb. load on one square inch (25mm) at any location with a top surface deflection not to exceed 0.10" (2.5mm), and a permanent set not to exceed .010" (0.25mm).

Uniform Load Rating

312.5 lb. per square foot with a maximum top surface deflection not to exceed .040" (1mm), and a permanent set not to exceed .010" (0.25mm) with edge support stringers.

Ultimate Load

Exceeds 4800 lb. per square inch minimum at weakest point with edge support stringers.

TecBase 1500 Panel Performance Ratings

Rolling Load

- 1,250 lbs. applied through a 3" (76mm) dia. x 1³/₁₆" (46mm) wide caster for 10 cycles over the same path with a maximum of .040" (1mm) top surface permanent set with edge support stringers.
- 1,000 lb. applied through a hard rubber-surfaced wheel 10" (254mm) dia. x 4" (102mm) wide for 10,000 cycles over the same path with a maximum of .040" (1mm) top surface permanent set with edge support stringers.

Impact Load

A 150 lb. load dropped from 36" (914mm) onto a one-inch square indenter shall not cause a system failure with edge support stringers.

Concentrated Load Rating

1,500 lb. load on one square inch (25mm) at any location with a top surface deflection not to exceed 0.10" (2.5mm), and a permanent set not to exceed .010" (0.25mm).

Uniform Load Rating

375 lbs. per square foot with a maximum top surface deflection not to exceed .040" (1mm), and a permanent set not to exceed .010" (.25mm) with edge support stringers.

Ultimate Load

Exceeds 4,800 lb. per square inch minimum at weakest point with edge support stringers.

TecBase 2000 Panel Performance Ratings

Rolling Load

- 1,500 lbs. applied through a 3" (76mm) dia. x 1³/₁₆" (46mm) wide caster for 10 cycles over the same path with a maximum of .040" (1mm) top surface permanent set with edge support stringers.
- 1,200 lb. applied through a hard rubber-surfaced wheel 10" (254mm) dia. x 4" (102mm) wide for 10,000 cycles over the same path with a maximum of .040" (1mm) top surface permanent set with edge support stringers.

Impact Load

A 150 lb. load dropped from 36" (914mm) onto a one-inch square indenter shall not cause a system failure with edge support stringers.

Concentrated Load Rating

2,000 lb. load on one square inch (25mm) at any location with a top surface deflection not to exceed 0.10" (2.5mm), and a permanent set not to exceed .010" (0.25mm).

Uniform Load Rating

500 lbs. per square foot with a maximum top surface deflection not to exceed .040" (1mm), and a permanent set not to exceed .010" (0.25mm) with edge support stringers.

Ultimate Load

Exceeds 4,800 lb. per square inch minimum at weakest point with edge support stringers.

TecBase Airflow Panel Performance Ratings

Rolling Load

- 1,000 lbs. applied through a 3" (76mm) dia. x 1³/₁₆" (46mm) wide caster for 10 cycles over the same path with a maximum of .040" (1mm) top surface permanent set with edge support stringers.
- 650 lb. applied through a hard rubber-surfaced wheel 10" (254mm) dia. x 4" (102mm) wide for 10,000 cycles over the same path with a maximum of .040" (1mm) top surface permanent set with edge support stringers.

Impact Load

A 150 lb. load dropped from 36" (914mm) onto a one-inch square indenter shall not cause a system failure with edge support stringers.

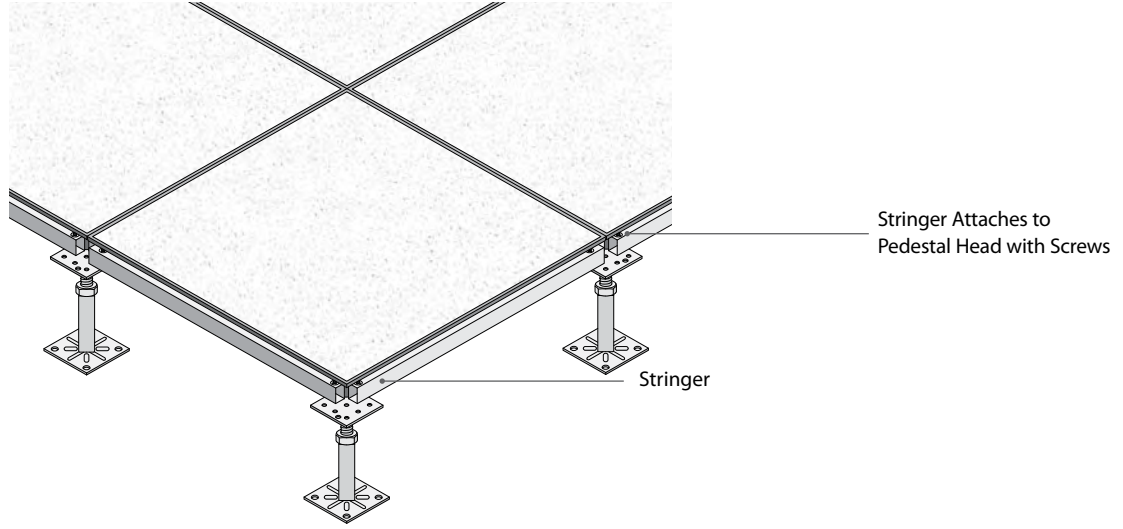
Concentrated Load Rating

1,500 lb. load on one square inch (25mm) at any location with a top surface deflection not to exceed 0.10" (2.5mm), and a permanent set not to exceed .010" (0.25mm).

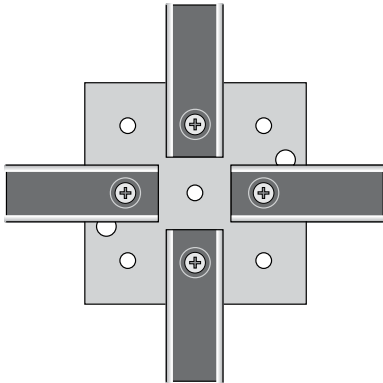
Uniform Load Rating

250 lbs. per square foot with a maximum top surface deflection not to exceed .040" (1mm), and a permanent set not to exceed .010" (0.25mm) with edge support stringers.

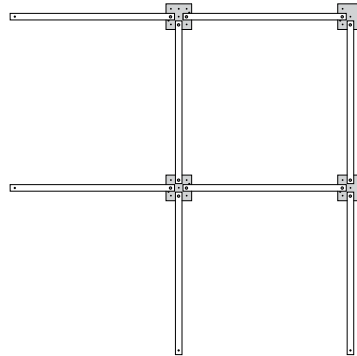
Stringers



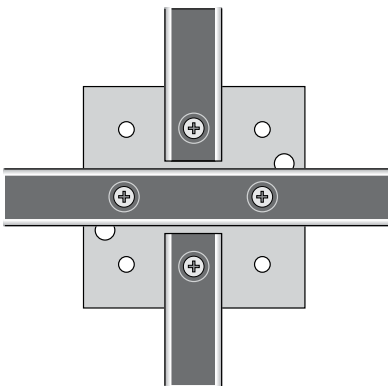
Two Foot Stringer



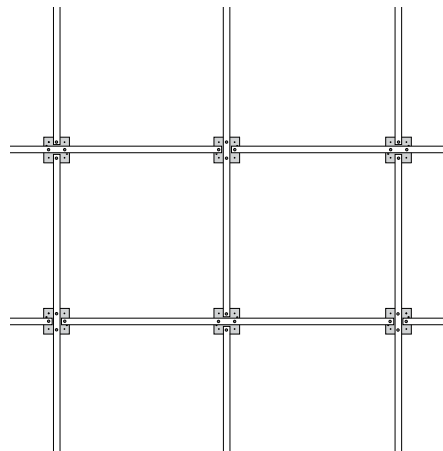
2' x 2' Rigid Grid Pattern



Four Foot Stringer

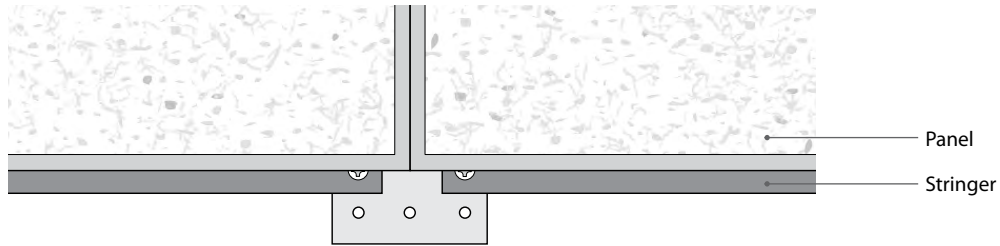


4' x 4' Rigid Grid Pattern

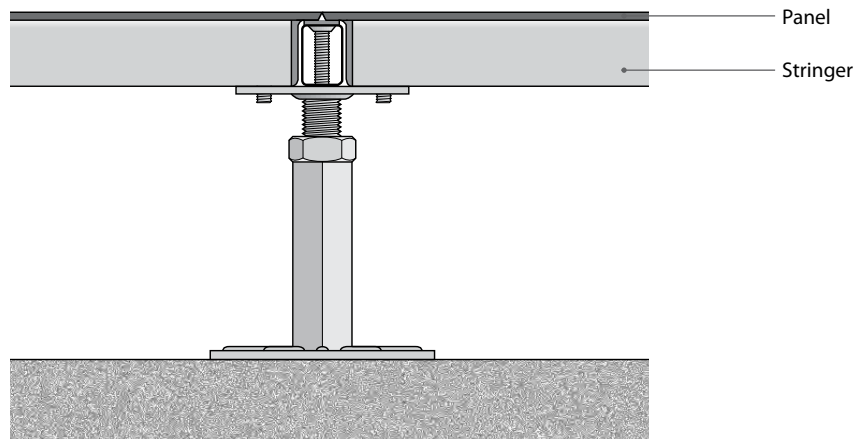


Understructure

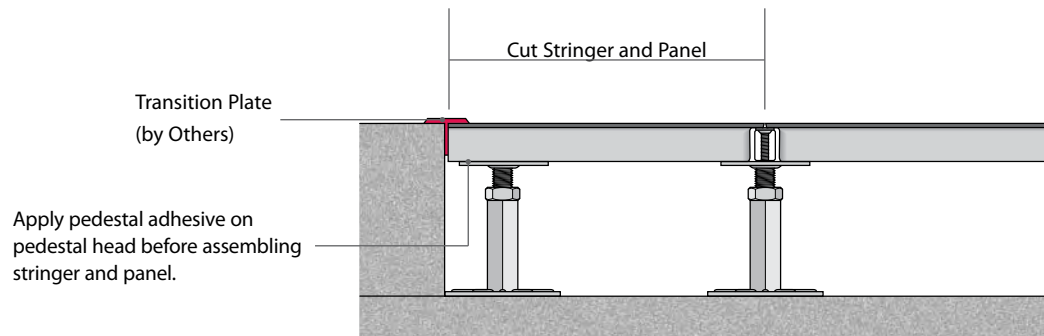
Pedestal Attachment: Top View



Pedestal Attachment: Side View



Curb

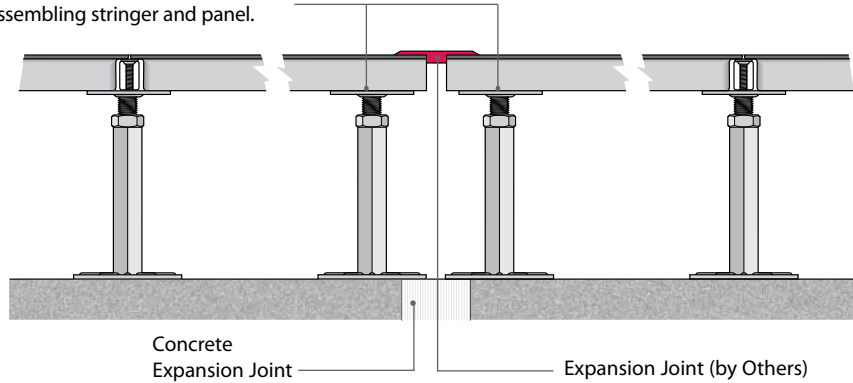


- Notes**
- Pedestal heads should be located as close to the edge of the panel as possible on 24" centers, maximum.
 - Side-view drawings are illustrated showing stringers.

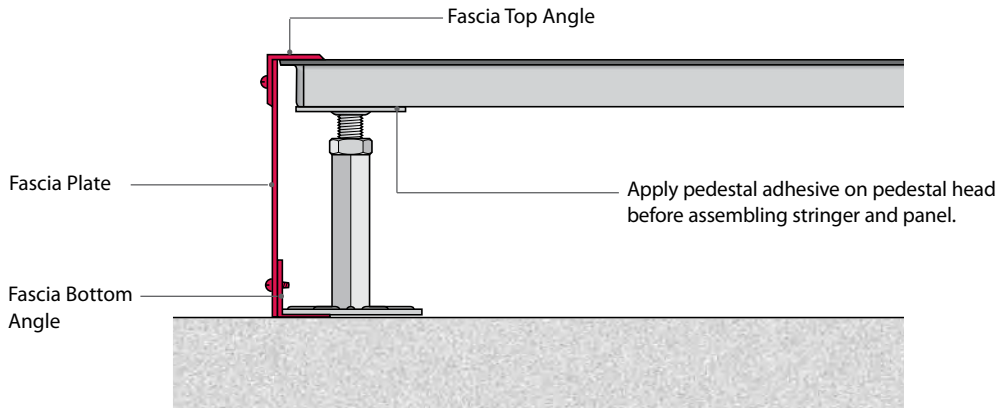
Understructure

Expansion Joint Application and Detail

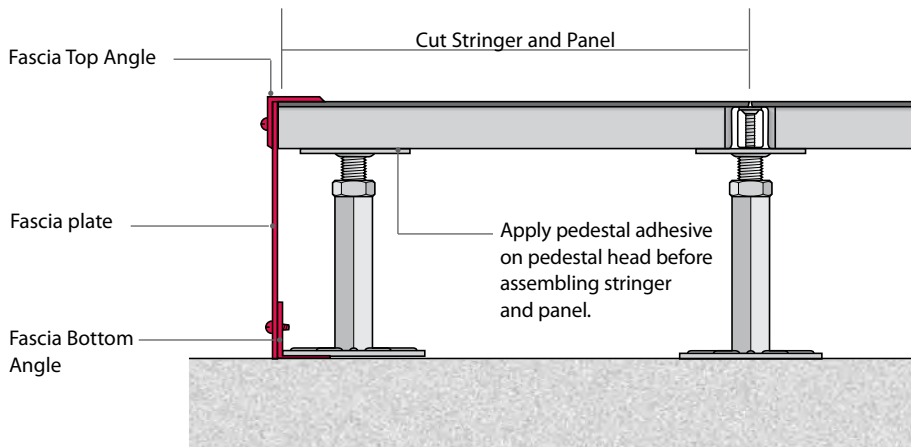
Apply pedestal adhesive on pedestal head before assembling stringer and panel.



Fascia with Full Panel



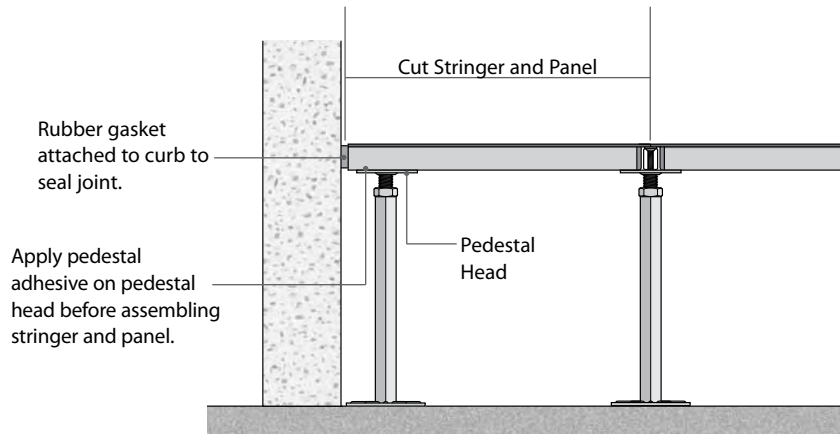
Fascia with Cut Panel



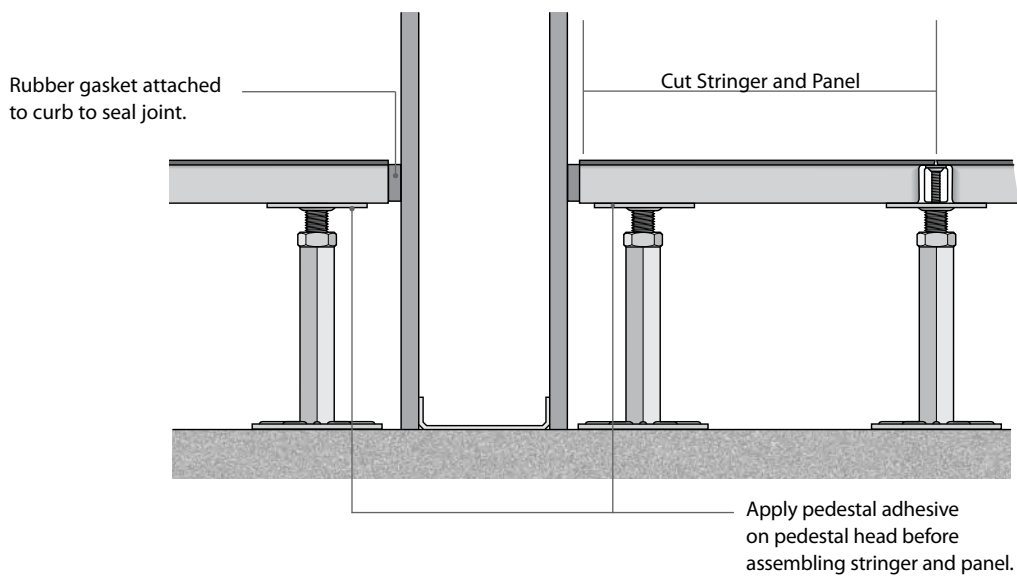
- Notes**
- Pedestal heads should be located as close to the edge of the panel as possible on 24" centers, maximum.
 - Side-view drawings are illustrated showing stringers.

Walls

Perimeter Wall Condition



Penetrating Wall

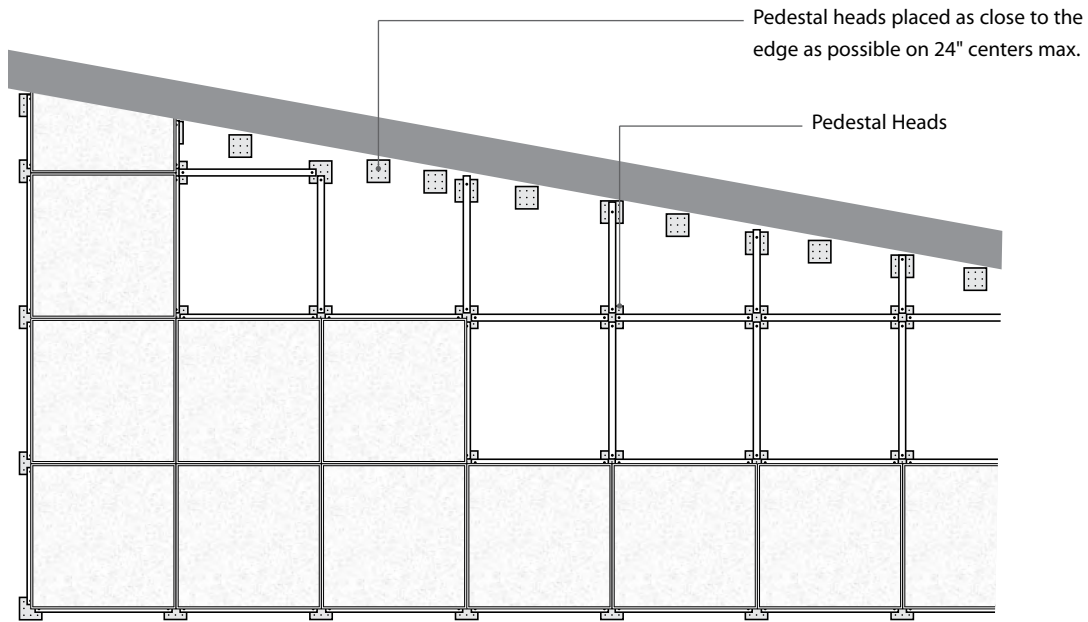


Notes

- Rubber gasket only required to seal joint when there is plenum space under the access floor system.
- Pedestal heads should be located as close to the edge of the panel as possible on 24" centers, maximum.
- Side-view drawings are illustrated showing stringers.

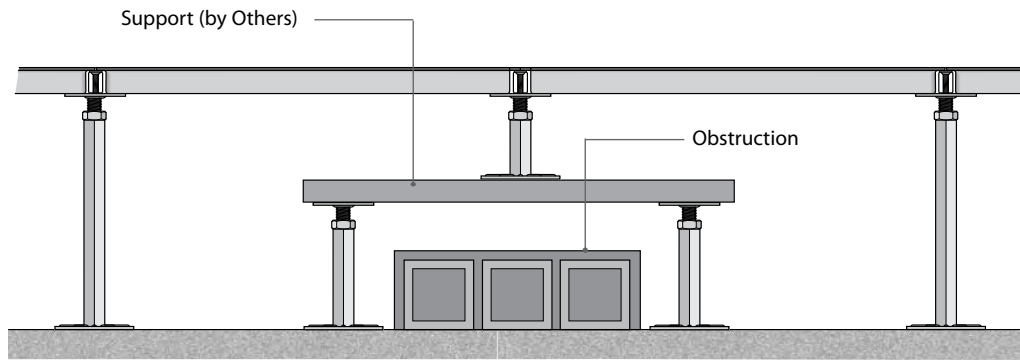
Angled Wall

Perimeter Condition at Angled Wall

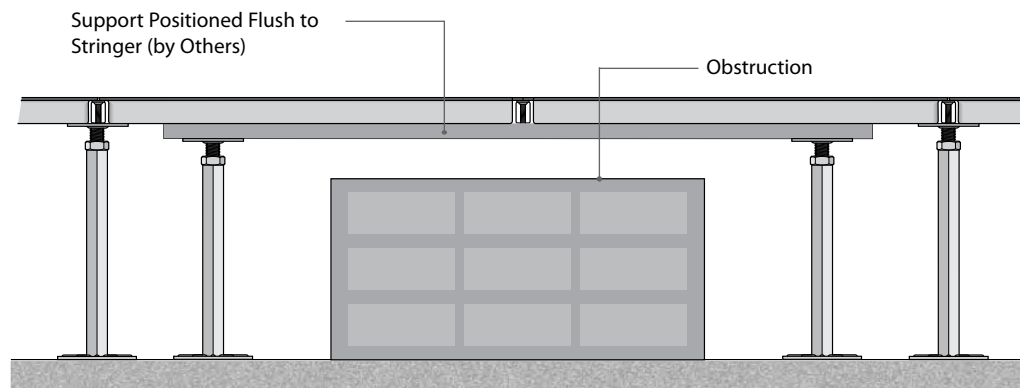


Bridging Obstructions on Subfloors

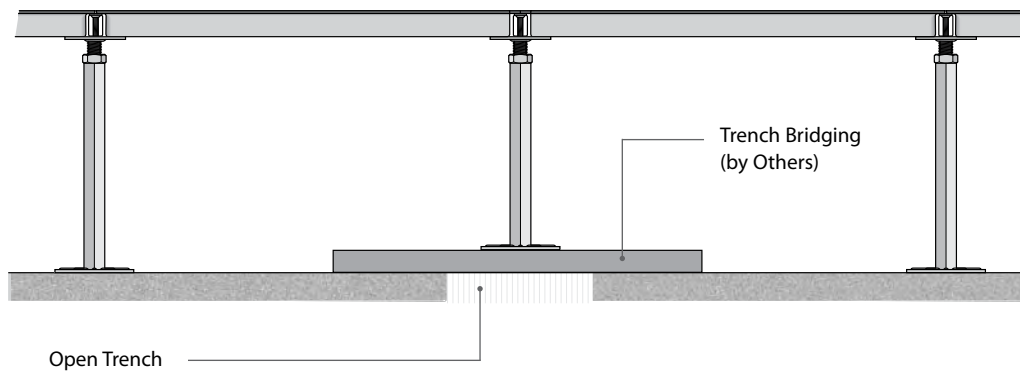
Bridging a Short Obstruction



Bridging a Tall Obstruction



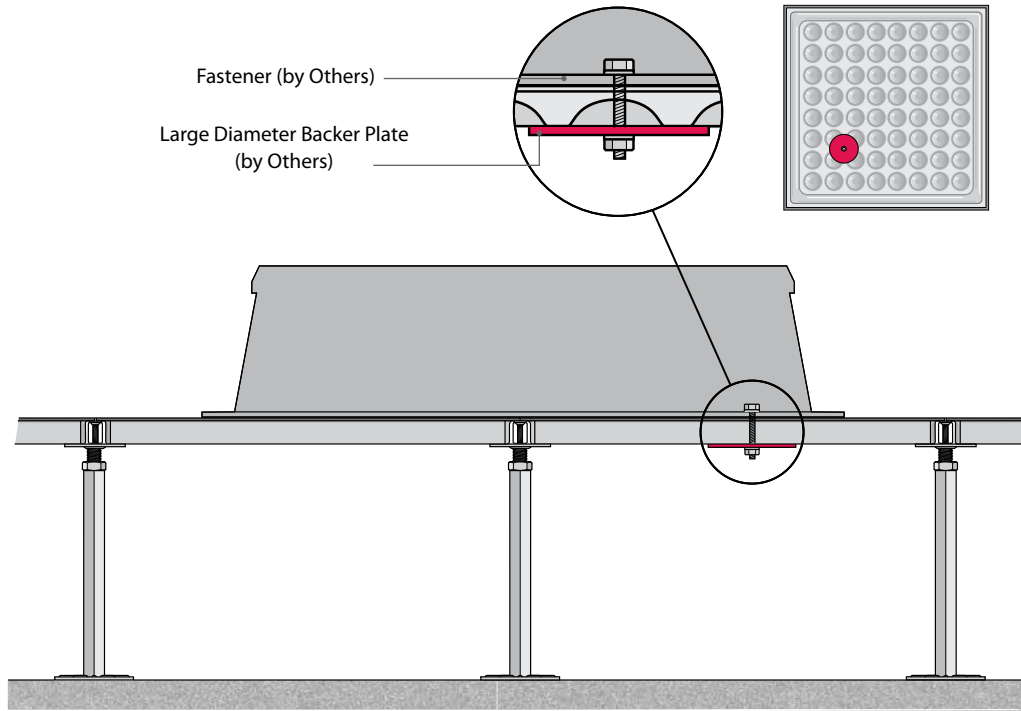
Bridging an Open Trench



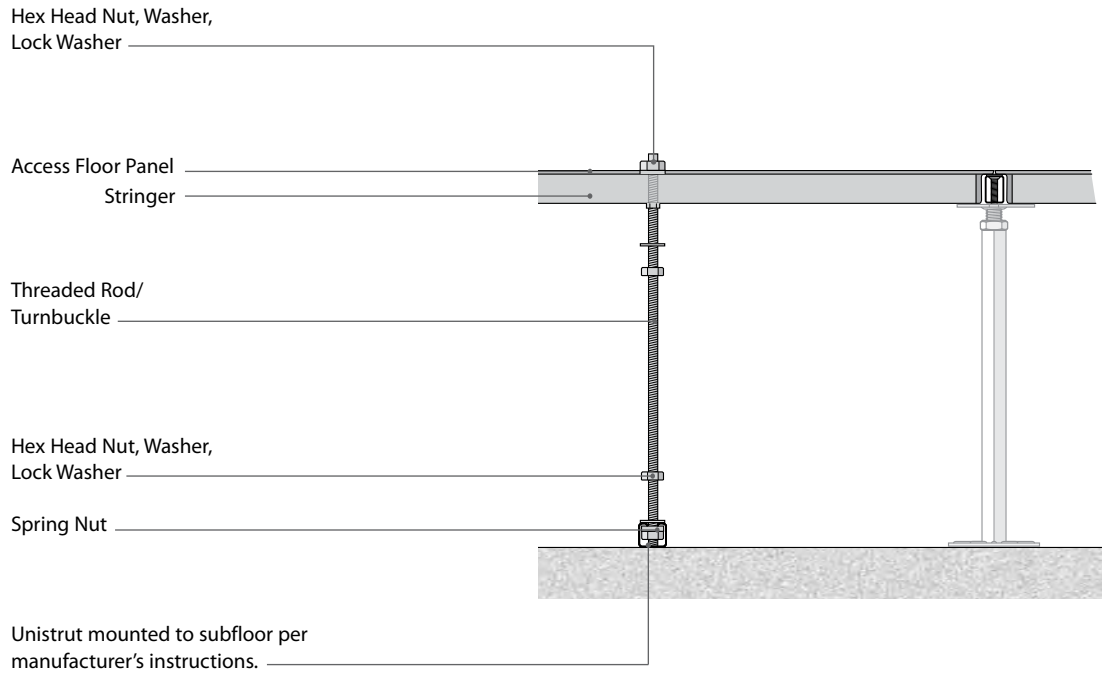
Note Side-view drawings are illustrated showing stringers.

Heavy Equipment on TecBase Access Floors

Mounting Equipment to Access Floors



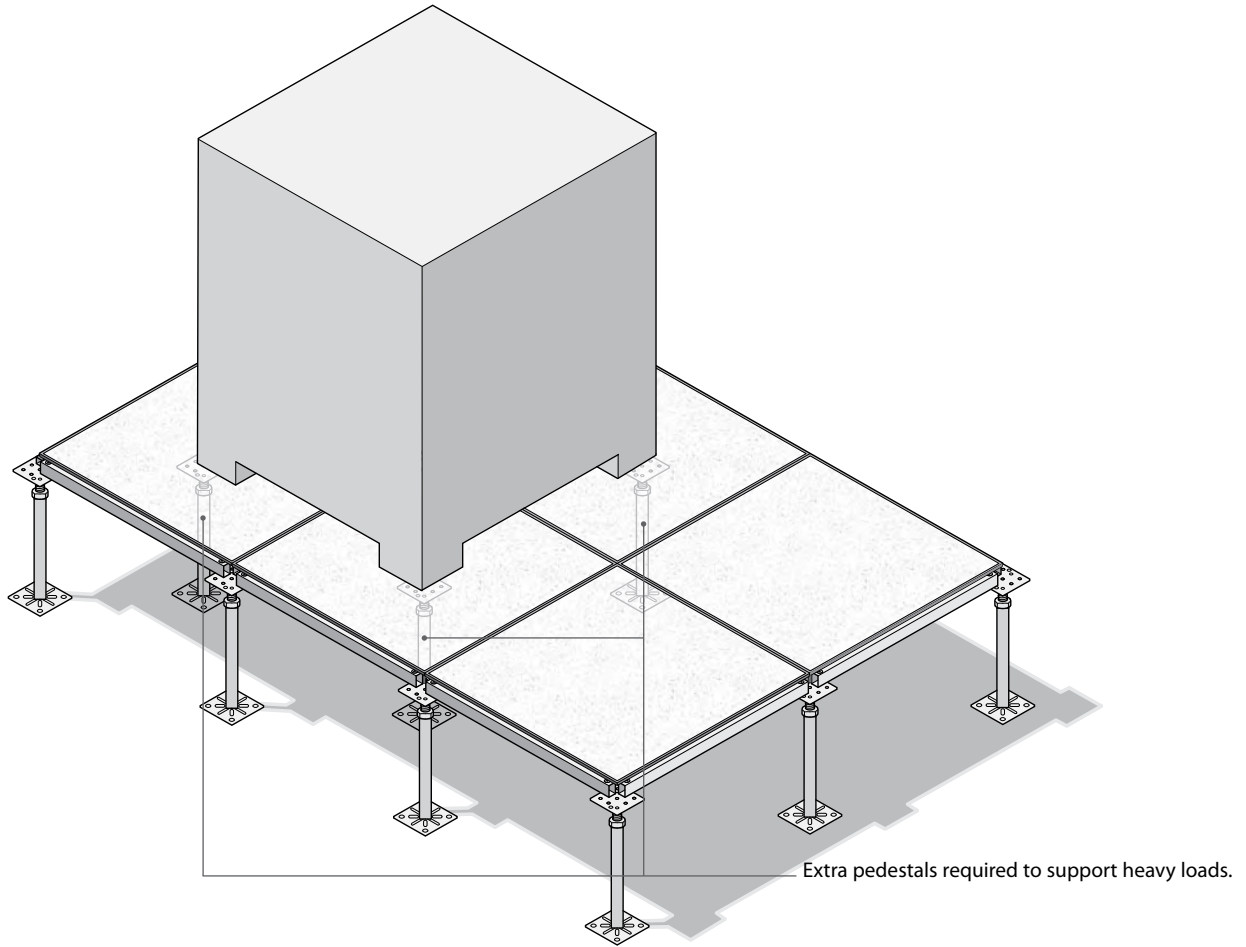
Mounting Equipment to Subfloors



Note Side-view drawings are illustrated showing stringers.

Supplemental Support for Heavy Equipment

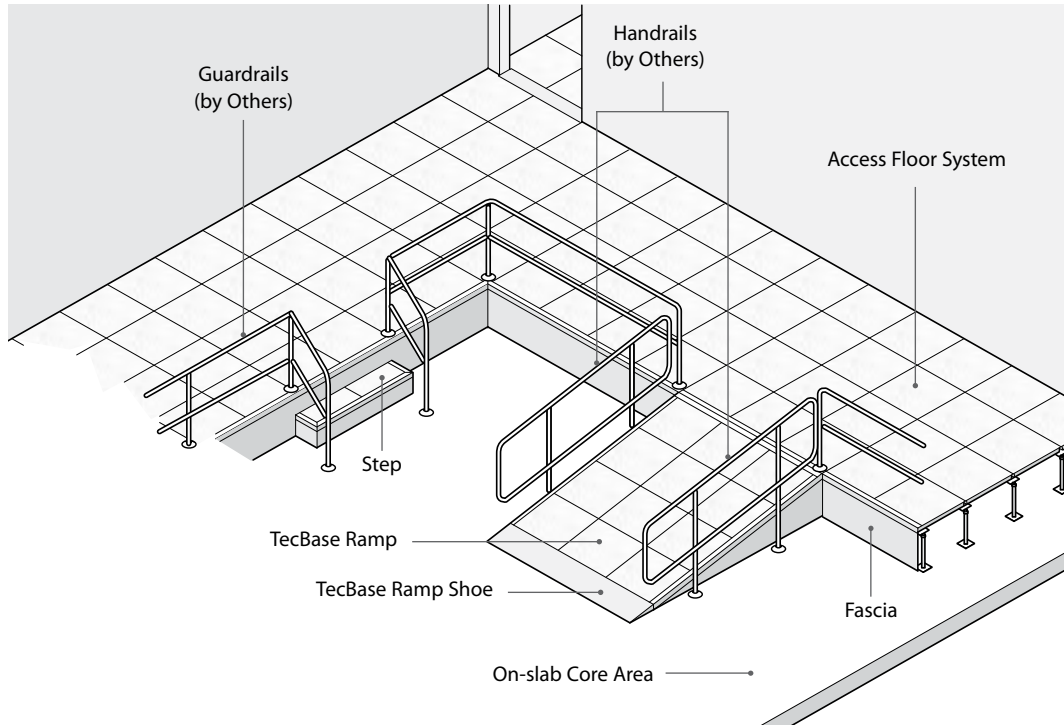
A heavy load is any load that exceeds the concentrated load rating of the panel.



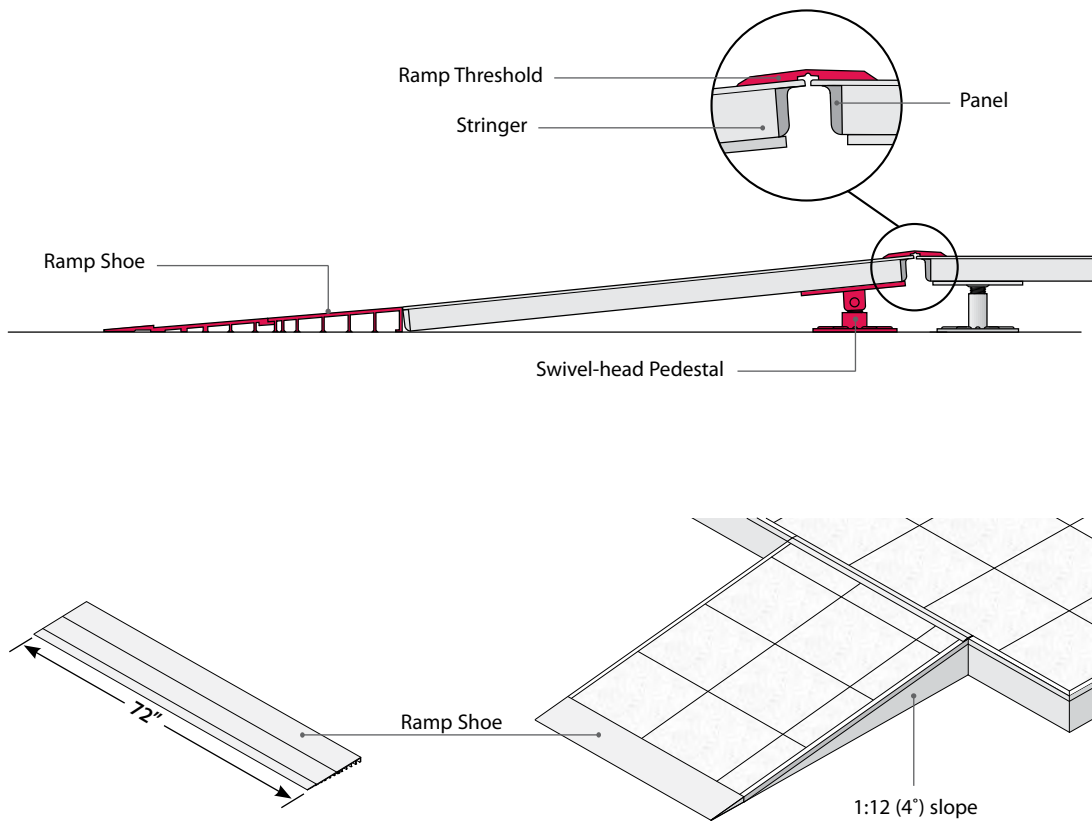
Note When moving heavy loads into a room, it is recommended that plywood is laid over the TecBase flooring for protection. Thickness of plywood is dependent upon load.

Ramps

Transition from Core Area to Access Floor

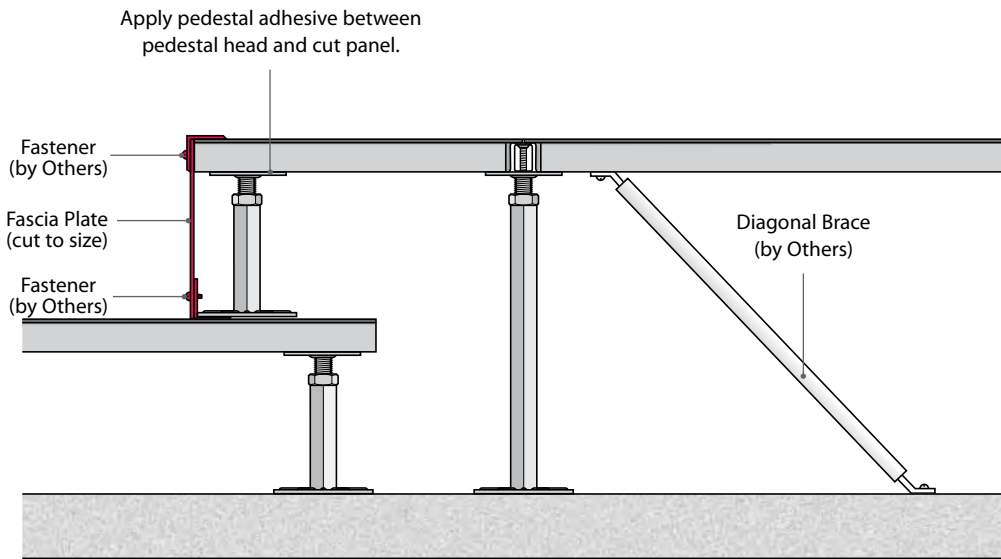


Ramp Details



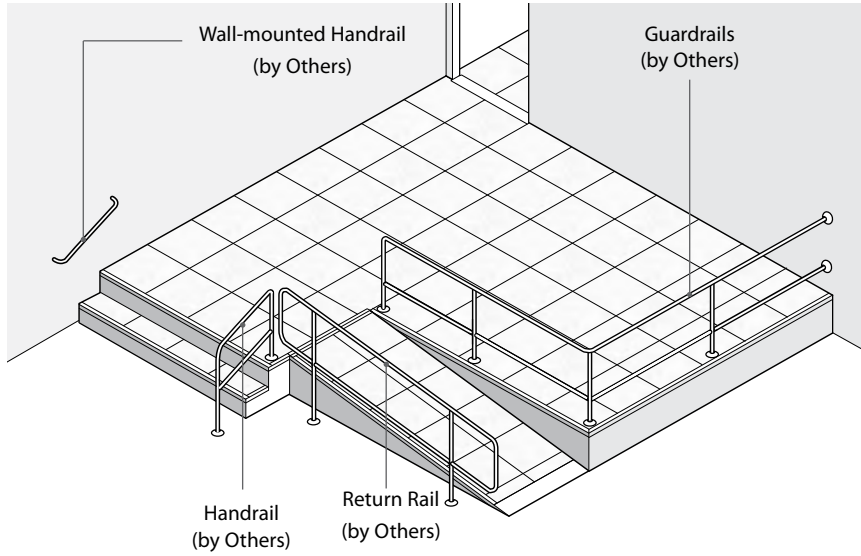
Steps

Step Detail with Bracing

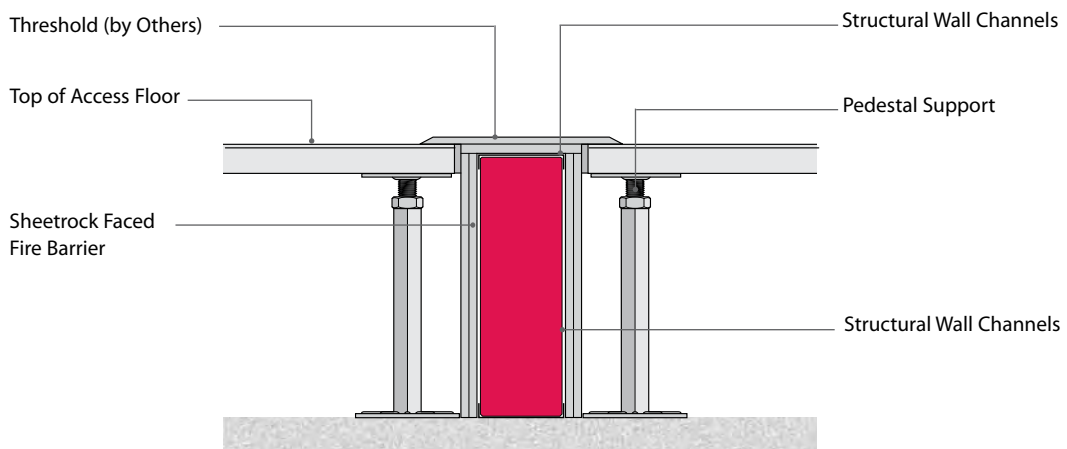
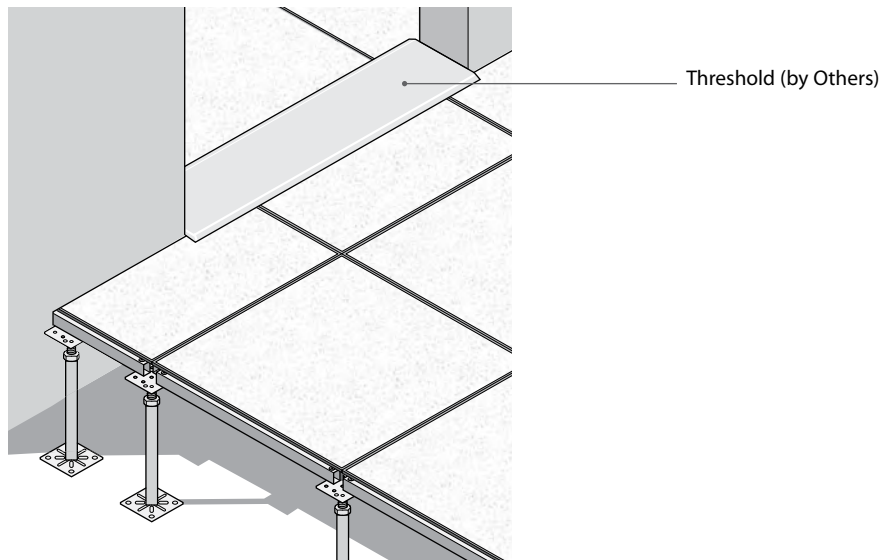


Fire and Safety

Handrail Assemblies



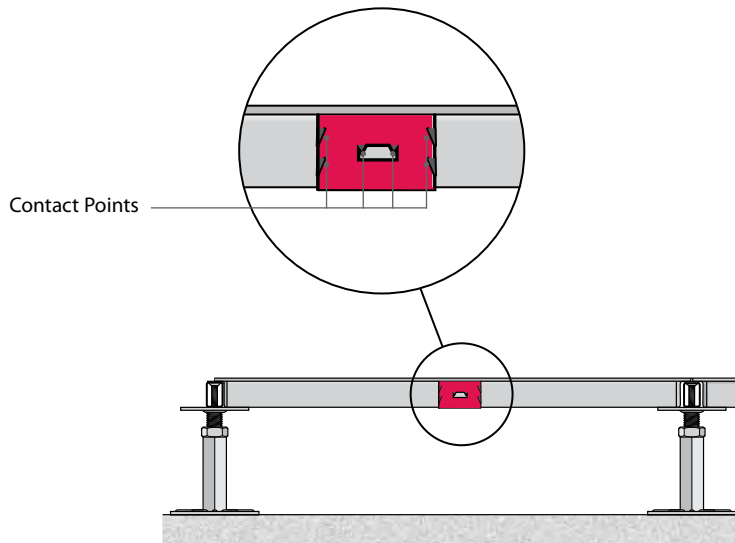
Fire Barrier at Door Threshold



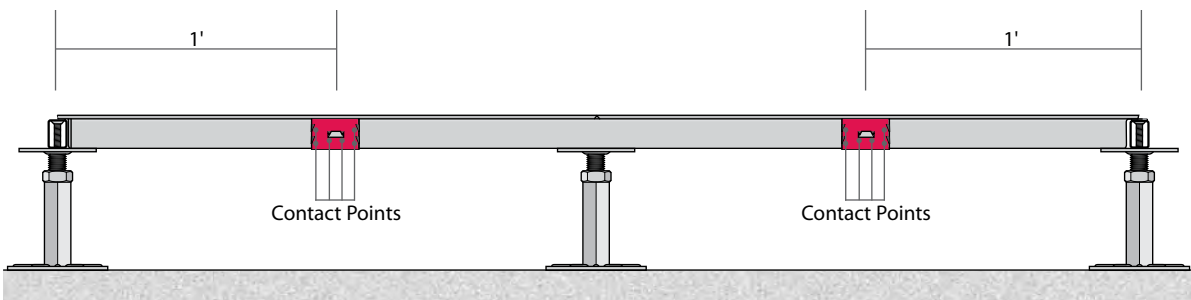
Electrical Continuity

Conductivity clips create contact points between the underside of panels and the stringer which is in direct contact with the pedestal head in order to create a ground path. Conductivity clips are required for TecBase when panel to pedestal resistance must be 10 ohms or less. On two foot stringers, there would be one conductivity clip positioned in the center. Four foot stringers would have two conductivity clips — each positioned one foot from the stringer's end.

Electrical Continuity on Two Foot Stringer



Electrical Continuity on Four Foot Stringer



Note Side-view drawings are illustrated showing stringers.

TecBase Access Flooring

Three Part Guide Specification for 1250, 1500, and 2000

PART 1 - GENERAL

1.01 Description

- A. The access floor system shall consist of interchangeable panels, understructure, and all labor, material, equipment, and installation as called for in the specifications and/or shown on the Architect's Drawings.
- B. Related Work Specified Elsewhere:
 - 1. Concrete work and concrete floor sealer is specified in Section 03 30 00.
 - a) Concrete sealer and pedestal adhesive must be chemically compatible with each other.
 - 2. Carpet and carpet tile work as specified in Section 09 68 00 (09680 MasterFormat 95)
 - 3. Mechanical air distribution as specified in Section 23 30 00 (15800 MasterFormat 95)
 - 4. Electrical connections and grounding as specified in Section 26 05 00 (16100 MasterFormat 95).

1.02 Design Performance and Certification of Product

- A. Provide access flooring system consisting of moveable assemblies composed of modular floor panels supported on pedestals forming accessible under floor cavities to accommodate electrical, mechanical, and HVAC services and complying with performance requirements specified. Raised floor panels must be interchangeable with each other except where cut for special conditions.
- B. Load testing shall be performed according to "Recommended Test Procedures for Access Flooring" as established by the Ceiling and Interior Systems Construction Association (CISCA). These procedures shall be used as a guideline when presenting load performance product information.

1250 Panel Design Performance

- 1. **Concentrated Load:** 1,250 lb on one square inch (25mm) load at any location with a top surface deflection not to exceed 0.10" (0.762mm) and a permanent set not to exceed .010" (0.25mm).
- 2. **Ultimate Load:** Panel shall be designed to withstand load of 3,750 lb. minimum at weakest point with stringer.
- 3. **Rolling Load:** Panels shall withstand a rolling load of 1,000 lbs. applied through a 3" dia. (76 mm) x 1¹³/₁₆" (46 mm) wide caster for 10 cycles over the same path with less than 0.040" top surface permanent set. Panels shall withstand a rolling load of 800 lb. applied through a hard rubber-surfaced wheel 6" (152 mm) dia. x 1¹/₂" wide for 10,000 cycles over the same path. Permanent set at the conclusion of the test shall not exceed 0.040" (1 mm).
- 4. Flame spread of 5 or less and smoke developed of 10 or less when tested according to ASTM E-84.

1500 Panel Design Performance

- 1. **Concentrated Load:** 1500 lb on one square inch (25 mm) load at any location with a top surface deflection not to exceed 0.10" (2.5 mm) and a permanent set not to exceed .010" (.25 mm).
- 2. **Ultimate Load:** Panel shall be designed to withstand load of 3,750 lb. minimum at weakest point with stringer.
- 3. **Rolling Load:** Panels shall withstand a rolling load of 1,250 lbs. applied through a 3" dia. (76 mm) x 1¹³/₁₆" (46 mm) wide caster for 10 cycles over the same path with less than 0.040" top surface permanent set. Panels shall withstand a rolling load of 1000 lb. applied through a hard rubber-surfaced wheel 6" (152 mm) dia. x 1¹/₂" wide for 10,000 cycles over the same path. Permanent set at the conclusion of the test shall not exceed 0.040" (1 mm).
- 4. Flame spread of 5 or less and smoke developed of 10 or less when tested according to ASTM E-84.

2000 Panel Design Performance

1. **Concentrated Load:** 2000 lb on one square inch (25 mm) load at any location with a top surface deflection not to exceed 0.10" (2.5 mm) and a permanent set not to exceed .010" (.25 mm).
 2. **Ultimate Load:** Panel shall be designed to withstand load greater than 4,800 lbs at weakest point with stringer.
 3. **Rolling Load:** Panels shall withstand a rolling load of 1,500 lbs. applied through a 3" dia. (76 mm) x 1¹³/₁₆" (46 mm) wide caster for 10 cycles over the same path with less than 0.030" top surface permanent set. Panels shall withstand a rolling load of 1200 lb. applied through a hard rubber-surfaced wheel 6" (152 mm) dia. x 1¹/₂" wide for 10,000 cycles over the same path. Permanent set at the conclusion of the test shall not exceed 0.188" (4.7 mm).
 4. Flame spread of 5 or less and smoke developed of 10 or less when tested according to ASTM E-84.
- C. Product tests shall be witnessed and certified by an accredited independently audited engineering and testing laboratory based in the U.S.A. with experience testing access floor components in accordance with CISCA test methods.

1.03 Submittals

- A. Samples: Submit a sample of the floor panel and each understructure component.
- B. Shop Drawings:
1. Submit drawings indicating raised floor panel layout, including ramp, step, and railing location.
 2. Include details of assembly components, edge details, and anchoring of pedestal bases to subfloor.
- C. Certificates:
1. Submit independent testing organization certificates indicating compliance with specified design criteria when tested and reported according to CISCA "Recommended Test Procedures for Access Floors."
 2. Submit seismic calculations if required in accordance with local and state building codes as specified. Calculations shall be performed using current seismic program and submitted to a local structural engineering licensed in the state where the project is located. The structural engineer shall sign and seal these calculations confirming that these calculations meet all local and state codes for seismic pedestal assemblies. A signed copy of these calculations must be given to the architect and local building department as required.

1.04 Quality Assurance

- A. Installer: A company with minimum of five years experience in the installation of access floor systems of comparable size and complexity.
- B. Tolerances:
1. Manufacturing tolerance:
 - a) Nominal panel size ± 0.020 " (0.5mm) or less.
 - b) Panel flatness ± 0.020 " (.5mm) or less.
 - c) Panel squareness ± 0.015 " (0.4mm) or less.
 - d) Panel interchangeability — all panels, except those modified to meet special conditions, shall be interchangeable.
 2. Installation Tolerance:
 - a) Finished installation shall be level within ± 0.060 " (2mm) in 10' (3m) and ± 0.100 " (3mm) for the entire floor.

1.05 Project Conditions

- A. The General Contractor and/or Owner shall provide a clean, level, dry subfloor, temperature controlled, and protected from the weather.
- B. Access flooring storage and installation areas shall be maintained at a temperature between 40° F and 90° F, and between 35% to 70% relative humidity for 24 hours the day before, during, and after installation.
- C. Overhead construction work must be completed before installing access floor to avoid damage to panels and finishes.
- D. Substrate must be level to within $\frac{1}{8}$ in 10 feet.

PART 2 - PRODUCTS

2.01 Manufacturer

A. The access flooring system shall be as manufactured by Haworth Inc. located in Grand Rapids, Michigan 49512.

1. Substitutions will be considered, providing design criteria is met or exceeded.

2.02 Materials

A. Floor Panels: TecBase 1250, 1500, or 2000 pound shall be cementitiously filled panels fabricated with full hard steel top sheet and die formed, 64-domed, steel bottom pan joined together by resistance welding to form an enclosed assembly. Thickness of steel sheet shall be as required to meet specific load requirements.

1. Panels shall be nominal finished 24" (610mm) square and protected against corrosion by manufacturer's factory applied finish.
2. Floor panel surface shall be factory applied $\frac{1}{8}$ " or $\frac{1}{16}$ " thick high pressure laminate, static dissipative or conductive vinyl as indicated on the Architectural Plans.
3. High pressure laminates or one-piece vinyl tile shall be optionally finished at the edges with vinyl trim, as indicated on the Architectural Plans.
4. Panels shall have a maximum electrical resistance of 10 ohms or less from the top edge of the panel to the understructure, less surface covering, as tested according to NFPA 99 modified.

B. Pedestals:

1. Pedestal assemblies shall be of hot-dip galvanized steel. The pedestal head shall be yellow zinc dichromate finished steel.
2. The base shall be a minimum of 16 square inches and shall be stamped and/or embossed on its underside and shall be adhered to the subfloor with an adhesive recommended by the access flooring manufacturer.
3. Where mechanical anchors are required for seismic zones, provide same as required by project specific seismic calculations.
4. The threaded stud will be $\frac{3}{4}$ " (19mm) diameter steel.
5. The head assembly shall be designed to accept rigid grid stringers fastened in place with $\frac{1}{4}$ " 20 machine screws.
6. The entire assembly shall provide an adjustment range of ± 1 " (25mm) of vertical adjustment, when finished floor height is 6" (152mm) or more, adjustable at $\frac{1}{64}$ " (0.4mm) increments without rotating pedestal head.
7. The assembly shall provide a mechanical means to lock the floor in a level plane and adjustments shall be capable of being made without special tools.
8. Pedestal assembly shall support not less than 5,000 lb. axial load and shall resist an average 1,000 inch-pound overturning moment when bonded to a clean concrete slab.

C. Stringers:

1. Stringers shall be roll formed 18 gauge yellow zinc dichromate steel with an integrated gasket.
2. Stringer shall nest between the panels and be capable of supporting a 350 lb. concentrated load at mid span with less than 0.010" permanent set.
3. Stringer shall be either 2' x 2' or 4' x 4' pattern and shall be secured by a fastener.

D. Accessories:

1. Furnish ramps, steps, lateral bracing, fascia, handrails, cutouts, and miscellaneous items where indicated.
2. Provide service outlets for power, communication, and data wiring in locations as shown on Drawings.

PART 3 - EXECUTION

3.01 Inspection

- A. Examine the subfloor which is to receive access flooring for dryness, cleanliness, unevenness, or any irregularities that will affect the quality of the access flooring.
 - 1. Verify that material storage and installation areas are at recommended temperature and relative humidity before, during, and after installation.
 - 2. Verify that substrate is level to within 1/8" (3mm) in 10' (3m).
 - 3. Do not commence installation of access flooring until subfloor is clean and dry, temperature controlled, and protected from the weather.

3.02 Installation

- A. Install the access floor system per the manufacturer's instructions.
- B. Furnish and install floor diffusers if required as indicated on Mechanical Plans.
- C. Remove debris generated by the installation as work progresses.
- D. Replace damaged materials prior to the application of field applied surfaces.

3.03 Field Quality Control

- A. Take random panel from shipment received at construction site and test panel for compliance with stated load criteria if directed by Architect/Owner.

3.04 Acceptance

- A. General Contractor or Owner shall accept completed access floor in whole or in part, prior to allowing other trades to perform work which affects the installed access floor.
- B. General Contractor shall suitably protect the accepted access floor and accessories from damage, contamination, or overloading.



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