

Agile and Sustainable Building Infrastructure Solutions

Products for Data Centers and Commercial Buildings



Tate®

Contents



01

Access Floors

ConCore® Panels	8
All Steel Panels	10
Composite Board Panels	12
STONEWORKS® Panels	14
Understructure Systems	16
Accessories	22

02

Architectural Finishes

STONEWORKS® Finishes	
Classic Concrete	28
Decorative Concrete	30
Slate	32
Granite	34
Terrazzo	36
Laminated Finishes	
Porcelain	40
Wood	42
Resilients	44
Custom Panels and Designs	46
Freelay Finishes	
Attiro® Magnetic Wood	48
Carpet	50



03

Airflow Panels
& Controls

Vertical Airflow Panels	
GrateAire® Panels	54
Perforated Panels	55
Directional Airflow Panels	
DirectAire®	56
DirectAire® AL	57
DirectPerf® 32%	58
DirectPerf® 25%	59
Manual Airflow Controls	60
Automated Airflow Controls	
PowerAire®	62

04

Containment

Sliding Doors	66
Hinged Doors	67
Hard Roof	68
Partitions	70
Accessories	72

05

Structural
Ceilings

Tate Grid	76
Tate Duo	78
Tate Strut	80
Accessories	82



The future of the built environment is here, and it's right under your feet. For more than 50 years, Tate has been recognized worldwide as an industry leader in the research, development, and manufacture of building infrastructure solutions for both commercial and data center applications.

Whether Tate is driving innovation in today's cutting edge workspaces with factory engineered high-end finishes for our access floor systems, or designing customized airflow and infrastructure solutions for the data centers of tomorrow – or anything else in between – we've built our business on a passion for making agile workspaces that are affordable, efficient, and sustainable.

History

Tate is part of the Kingspan Group plc., founded in Kingscourt Co. Cavan Ireland in 1965, Kingspan has become a global leader in the design, development and delivery of advanced building construction products and solutions and has grown to over 14,000 employees across five continents.

Tate joined this global Group in 2001 and has been in business for more than 50 years. During this time Tate has become an industry leading global provider of innovative next generation solutions for both commercial and data center applications.



Performance

Raised access floors are the most cost effective way of creating a flexible working environment by utilizing the floor void to manage the distribution of M&E services and HVAC systems. Easy access to the underfloor area allows for greater design flexibility, faster construction, workspace reconfiguration and rapid repairs.

Our extensive product range is designed to meet the needs of a variety of buildings and uses. Each system is designed, manufactured and tested using CISCA performance methodology to confirm our performance meets design specifications.

Services

We have developed an extensive multi-national distribution and installation network. Whether you are working with our direct contracting team in Canada or Australia or through one of our authorized dealers, we are able to combine unrivalled knowledge and expertise with the highest quality products and services.

We can provide advice and guidance on every aspect of a project throughout the conceptual and schematic design stages to construction details and installation support. Our experience is unrivalled, and our pedigree is built upon over 50+ years as the industry leader.



01

Access Floors

Maximize the Potential of Your Indoor Space

The perfect indoor environment in any commercial building should address a variety of needs. These needs include maintaining high-quality clean air, improving personal comfort control, responding to organizational and technological changes quickly and easily, and supporting the overall aesthetic value of the building – all while being cost-effective in both construction and operation. With Tate's access floors and underfloor service distribution system, you have the ability to address all of the factors required to create the perfect agile indoor environment that will reflect the goals and image of your organization.

You can take advantage of these benefits:

- Enhanced indoor environmental quality through superior IAQ, improved acoustics, and increased daylighting opportunities
- Maximum occupant comfort control at design inception and throughout the life of the building using underfloor air with modular 'plug & play' VAV or passive diffusers
- Energy efficiency through economizer operation, and less fan energy
- Easily adapts to technological and organizational changes over the building's life-cycle at low cost
- Point-of-use services wherever you need them with complete flexibility, accessibility, and unlimited capacity
- Accelerated tax depreciation opportunities
- Reduced first cost and construction time due to significant reduction in HVAC ductwork and use of underfloor pre-fabricated 'plug & play' wire / cable services
- Reduced operating costs and lower facility and maintenance costs through accessible, flexible and adaptable services

Access Floors

ConCore® Panels

ConCore® Access Floor panels are epoxy coated unitized shells consisting of a flat steel top sheet welded to a formed steel bottom pan filled with a highly controlled mixture of lightweight cement. Manufactured to exacting tolerances, these non-combustible, rigid, solid panels deliver the ultimate in strength, durability, and acoustic performance.

ConCore panels are suitable for almost any application and are ideal for field installed carpet or factory laminated with finishes such as hardwood, porcelain, HPL and ESD vinyls.



ConCore® Performance Selection Chart

System Performance Criteria* (tested on actual understructure)

Panel	Understructure	System Weight lbs/ft² (kg/m²)	Static Loads			Rolling Loads		Impact Loads lbs (kg)
			Design Loads¹ lbs (kN)	Min. Ultimate Loads lbs (kN)	Safety Factor² min 2.0	10 Passes lbs (kN)	10,000 Passes lbs (kN)	
ConCore® 1000	PosiLock®	8.0 (39)	1000 (4.4)	2000 (8.9)	PASS	800 (3.6)	600 (2.7)	150 (68)
ConCore® 1250	PosiLock®	8.5 (42)	1250 (5.6)	2500 (11.1)	PASS	1125 (5.0)	875 (3.9)	150 (68)
ConCore® 1500	PosiLock®	9.0 (44)	1500 (6.7)	3000 (13.3)	PASS	1250 (5.6)	1000 (4.4)	150 (68)
ConCore® 1000	Bolted Stringer	9.0 (44)	1000 (4.4)	2000 (8.9)	PASS	800 (3.6)	600 (2.7)	150 (68)
ConCore® 1250	Bolted Stringer	10.0 (49)	1250 (5.6)	2500 (11.1)	PASS	1000 (4.4)	800 (3.6)	150 (68)
ConCore® 1500	Bolted Stringer	10.5 (51)	1500 (6.7)	3000 (13.3)	PASS	1250 (5.6)	1000 (4.4)	150 (68)
ConCore® 2000	Bolted Stringer	11.5 (56)	2000 (8.9)	4000 (17.8)	PASS	1500 (6.7)	1250 (5.6)	200 (91)
ConCore® 2500	Bolted Stringer	12.0 (59)	2500 (11.1)	5000 (22.2)	PASS	2000 (8.9)	2000 (8.9)	200 (91)
ConCore® 3000	Bolted Stringer	13.0 (63)	3000 (13.3)	6000 (26.7)	PASS	2700 (12.0)	2400 (10.7)	300 (126)

All tests are performed using CISCAs Recommended Test Procedures for Access Floors with the exception of Design Load.

1. System Design Load is based on permanent set $\leq 0.010"$ and is verified by loading panels in accordance with the CISCAs concentrated load method but with panels installed on actual understructure instead of steel blocks. (Testing on blocks does not represent performance of an actual installation.) Ultimate, Rolling, and Impact Load tests are performed using CISCAs Test Procedures.

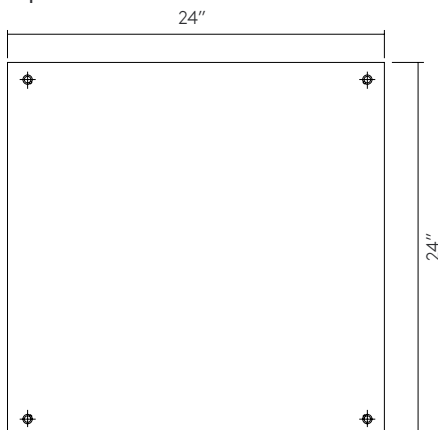
2. Safety Factor is Ultimate Load divided by Design Load.



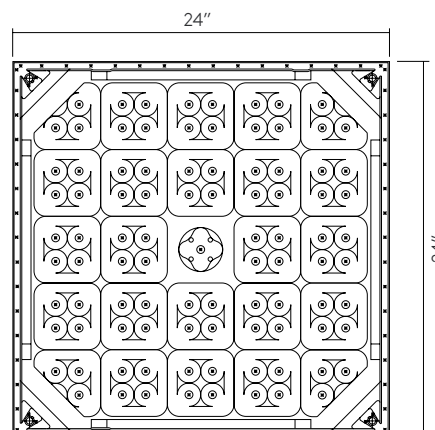
Exelon – Baltimore, MD | Architect: SmithGroupJJR Interior | Finish: Porcelain

Profile

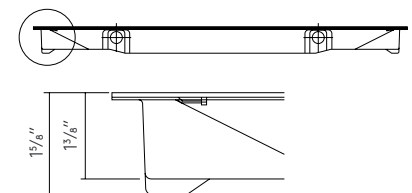
Top View



Bottom View



Side View



Access Floors

All Steel Panels

All Steel Access Floor panels are epoxy coated unitized shells consisting of a flat steel top sheet welded to a formed steel bottom pan. Manufactured to exacting tolerances, these non-combustible rigid, solid panels deliver the ultimate in strength and durability with the convenience of lightweight construction.

All Steel panels are typically used in data center or communication rooms when panel weight is a concern due to frequent access or building structural requirements and are ideal for factory laminated HPL and ESD vinyls.



All Steel Performance Selection Chart

System Performance Criteria* (tested on actual understructure)

Panel	Understructure	System Weight lbs/ft² (kg/m²)	Static Loads			Rolling Loads		Impact Loads lbs (kg)
			Design Loads¹ lbs (kN)	Min. Ultimate Loads lbs (kN)	Safety Factor² min 2.0	10 Passes lbs (kN)	10,000 Passes lbs (kN)	
All Steel 1000	Bolted Stringer	6.0 (29)	1000 (4.4)	2000 (8.9)	PASS	400 (1.8)	400 (1.8)	150 (68)
All Steel 1250	Bolted Stringer	7.0 (34)	1250 (5.6)	2500 (11.1)	PASS	500 (2.2)	500 (2.2)	150 (68)
All Steel 1500	Bolted Stringer	8.5 (42)	1500 (6.7)	3000 (13.3)	PASS	600 (2.7)	600 (2.7)	150 (68)

All tests are performed using CISCAs Recommended Test Procedures for Access Floors with the exception of Design Load.

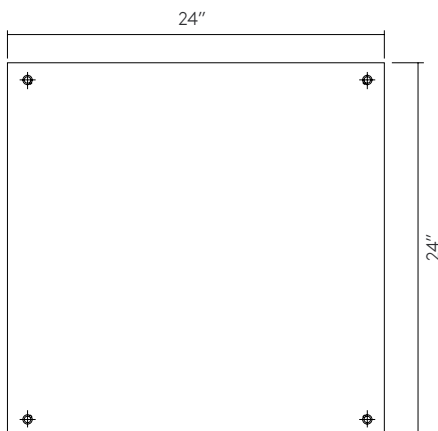
1. System Design Load is based on permanent set $\leq 0.010"$ and is verified by loading panels in accordance with the CISCAs concentrated load method but with panels installed on actual understructure instead of steel blocks. (Testing on blocks does not represent performance of an actual installation.) Ultimate, Rolling, and Impact Load tests are performed using CISCAs Test Procedures.

2. Safety Factor is Ultimate Load divided by Design Load.

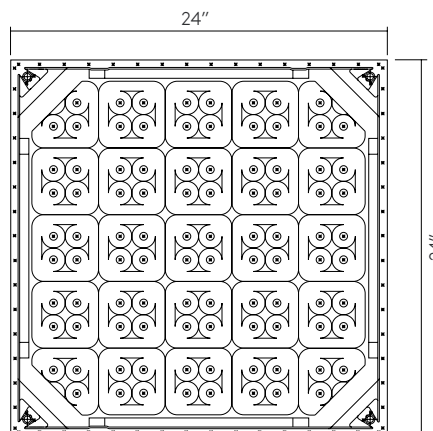


Profile

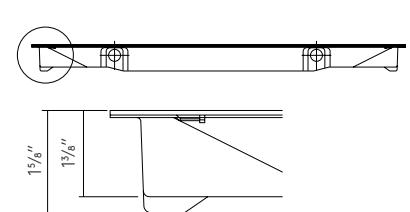
Top View



Bottom View



Side View



Access Floors

Composite Board Panels

Composite board panels are comprised of a strong composite board laminated to a E-coated steel bottom sheet. This panel provides a smooth surface that is intended for the lamination of resilient finishes such as linoleum, vinyl, rubber and LVT in commercial applications. A color coordinated edge banding is applied to the tapered edge of the panel for easy accessibility to underfloor components, all while creating a near seamless appearance.



Composite Board Performance Selection Chart

System Performance Criteria* (tested on actual understructure)

Panel	Understructure	System Weight lbs/ft² (kg/m²)	Static Loads			Rolling Loads		Impact Loads lbs (kg)
			Design Loads¹ lbs (kN)	Min. Ultimate Loads lbs (kN)	Safety Factor² min 2.0	10 Passes lbs (kN)	10,000 Passes lbs (kN)	
Composite Board	Heavy-Duty Bolted Stringer	7.6 (37)	1250 (5.6)	2500 (11.1)	PASS	1000 (4.4)	800 (3.6)	150 (0.6)

All tests are performed using the CISC Recommended Test Procedures for Access Floors with the exception of Design Load.

1. Design load capacities are verified using the CISC Concentrated Load Procedure (with loads applied through a 1" dia. indenter at the weakest point) but with panels supported by actual understructure rather than steel blocks. (Tests on panels supported by blocks are not representative of the panel or system performance in actual installations).

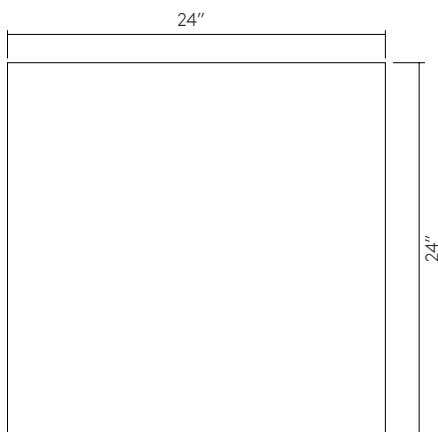
2. Safety Factor is Ultimate Load divided by Design Load.



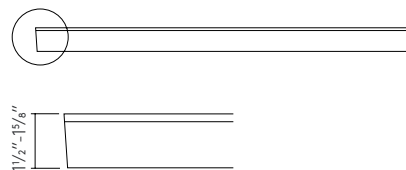
Case Western Reserve University and Cleveland Clinic, Samson Pavilion, Cleveland, OH
Architect: Foster + Partners & DLR Group | Finishes: Rubber and Carpet

Profile

Top View



Side View



Access Floors

STONWORKS®

Panels

Tate’s STONWORKS® panels are composed of a controlled mix of cement and aggregate which is cured to produce a slab with superior strength. STONWORKS® panels eliminate the need for laminated finishes as the high-end architectural finish and the structure of the panel is combined into a single integrated product.

STONWORKS® panels are typically used in commercial buildings and offer a range of aesthetics including classic concrete, decorative concrete, slate, granite and terrazzo.



STONWORKS® Performance Selection Chart

System Performance Criteria* (tested on actual understructure)

Panel	Understructure	System Weight lbs/ft² (kg/m²)	Static Loads			Rolling Loads		Impact Loads lbs (kg)
			Design Loads¹ lbs (kN)	Min. Ultimate Loads lbs (kN)	Safety Factor²	10 Passes lbs (kN)	10,000 Passes lbs (kN)	
STONWORKS® Panel (Eased Edge Only)	Free Standing	14.75 (72)	1250 (5.56)	1800 (8.0)	1.44	1000 (4.44)	800 (3.56)	100 (0.4)
STONWORKS® Panel (Eased Edge & Edge Banded)	Heavy-Duty Bolted Stringer	15.5 (75.7)	1250 (5.56)	1800 (8.0)	1.44	1000 (4.44)	800 (3.56)	100 (0.4)
STONWORKS® Panel (Eased Edge & Edge Banded)	Box Beam Stringer	16.50 (80.5)	2500 (11.12)	3750 (16.68)	1.50	2000 (8.88)	2000 (8.89)	200 (0.8)
STONWORKS® Outdoor Panel	Bison Exterior Pedestals	14.3 (69.8)	750 (3.34)	1500 (6.67)	2.00	600 (2.67)	450 (2.00)	50 (0.2)

All tests are performed using the CISC Recommended Test Procedures for Access Floors with the exception of Design Load.

1. Design load capacities are verified using the CISC Concentrated Load Procedure (with loads applied through a 1" dia. indenter at the weakest point) but with panels supported by actual understructure rather than steel blocks. (Tests on panels supported by blocks are not representative of the panel or system performance in actual installations).

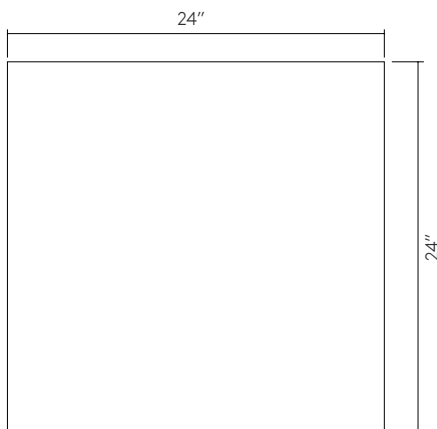
2. Safety Factor is Ultimate Load divided by Design Load.



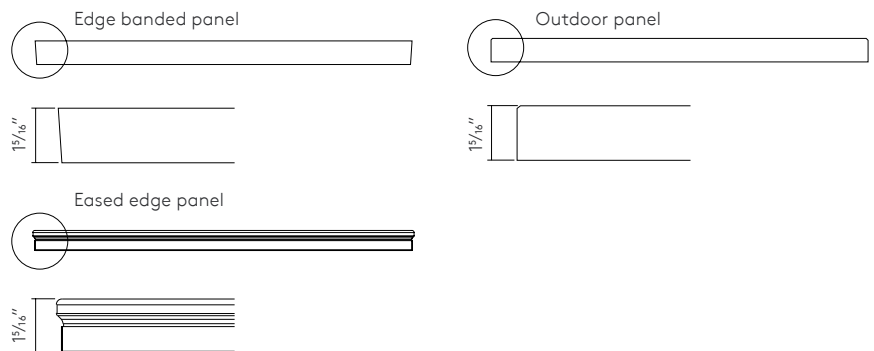
Telemundo Center – Miami, FL | Architect: Design Republic | Finishes: STONEWORKS® Classic Concrete, Carpet, & HPL

Profile

Top View



Side View



Access Floors

Understructure Systems

Tate has a complete line of understructure systems to meet the specific load capacity needs for your project, as well as provide proper positioning and air sealing capabilities. From four inch raised clearance to three feet of space underneath the floor, we have versatile systems for all types of installations.

Low Finished Floor Height

For applications where a large underfloor space isn't required, low finished floor height understructure is an easy way to provide a pathway for light cable and data infrastructure. It also provides a quick and easy way to level uneven floors, making it ideal for renovations.

Pedestal Base for Seismic Conditions

Tate also offers seismic force-resistant pedestal options for our complete understructure product range. With stronger vertical supports ranging from 17 guage 7/8" galvanized tubing to Schedule 40 pipe, the need for special bracing can be limited or eliminated entirely.



Understructure Compatibility

Panel	Bison Exterior*	PosiLock®	Bolted Stringer	Box Beam Stringer	Freestanding	Heavy-Duty Bolted Stringer
ConCore®		✓	✓			
All Steel		✓	✓			
Composite Board						✓
STONEWORKS®				✓	✓	✓
STONEWORKS® Outdoor	✓					

*Field Supplied by others.

Understructure System PosiLock®

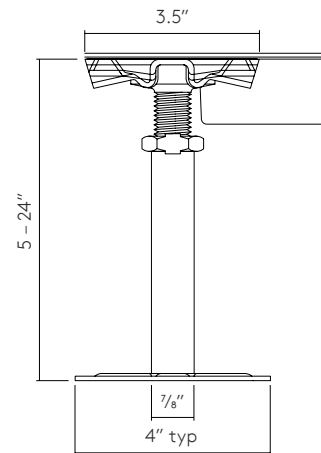
For ConCore and All Steel Panels

Tate's PosiLock® understructure system provides self-engagement and positioning of the floor panels without the need for stringers.

Key Performance Characteristics

- PosiLock® design provides self-engagement and positioning of floor panels
- Self-capturing fastener remains within the panel - will not get lost
- Steel pedestal head provides maximum strength
- Pedestal nut provides anti-vibration and locking features
- Seismic force-resistant pedestals are available that limit or eliminate the need for special bracing
- Typical floor heights from 5"-24" (12.5 cm-60 cm)

Profile



Panel engagement
feature viewed from
underside.



Understructure System Bolted Stringer

For ConCore, All Steel, and Airflow Panels

Tate's Bolted Stringer System provides lateral resistance to heavy rolling loads and seismic loading.

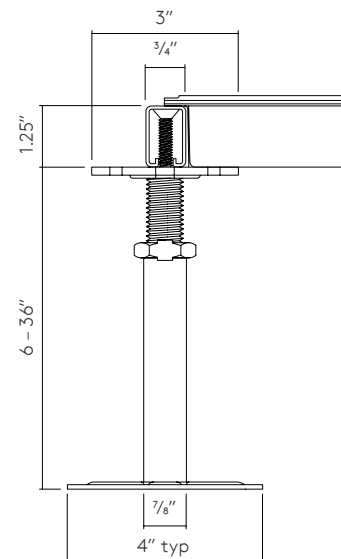


Close-up of stringer attachment to pedestal head

Key Performance Characteristics

- Designed for computer rooms, data centers, industrial applications, and heavy rolling load areas
- Allows floors to be built over 24" (60 cm) high
- Panels are gravity-held in understructure for fast removal and replacement
- Stringers provide lateral resistance to heavy rolling loads and seismic loading
- Seismic force-resistant pedestals are available that limit or eliminate the need for special bracing
- Typical floor heights from 6"-36" (15-90 cm) with other heights available

Profile



Understructure System Heavy Duty Bolted Stringer

For Composite Board and STONEWORKS® Panels

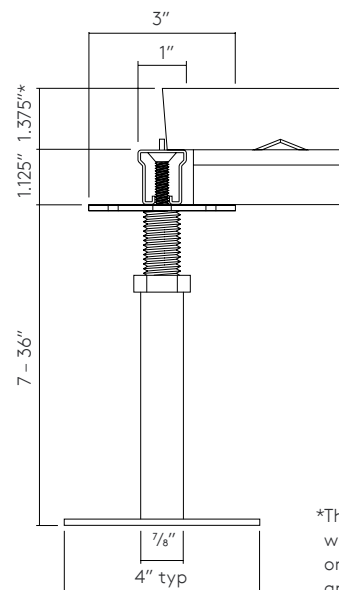
Tate's Heavy-Duty Bolted Stringer System provides lateral resistance to heavy rolling loads and seismic loading. Designed to support gravity-held panels and features a positioning tab for correct panel alignment.



Key Performance Characteristics

- Allows floors to be built over 24" (60 cm) high
- Panels are gravity-held in understructure for fast removal and replacement
- Stringers provide lateral resistance to heavy rolling loads and seismic loading
- Seismic force-resistant pedestals are available that limit or eliminate the need for special bracing
- Typical floor heights from 7"-36" (17.5-90 cm)
- Other pedestal designs available for floor heights as low as 4" and higher than 36"

Profile



*This measurement will differ depending on the panel type and chosen finish.

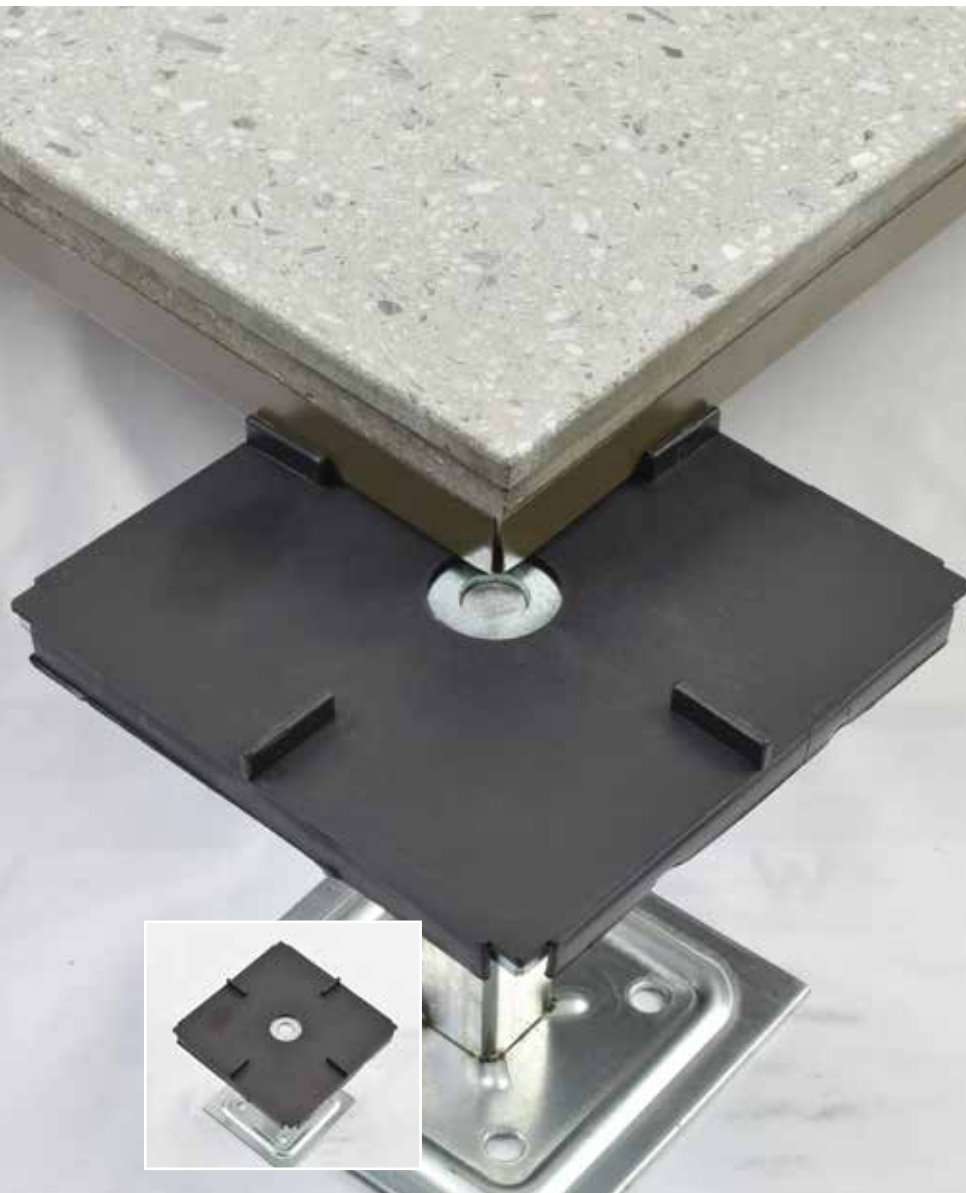
Understructure System Freestanding

For STONEWORKS® Panels with Eased Edge

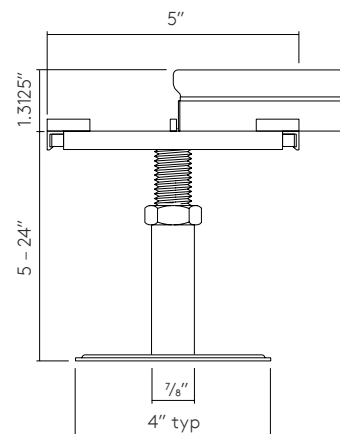
Tate's Freestanding system is designed for the STONEWORKS® Eased Edge panel.

Key Performance Characteristics

- Stringer-less system with panel installed directly to pedestal head.
- Clip on gasket for pedestal head with ribs for panel positioning
- Typical floor heights from 5"-24"
- Pedestal nut provides anti-vibration and locking feature



Profile



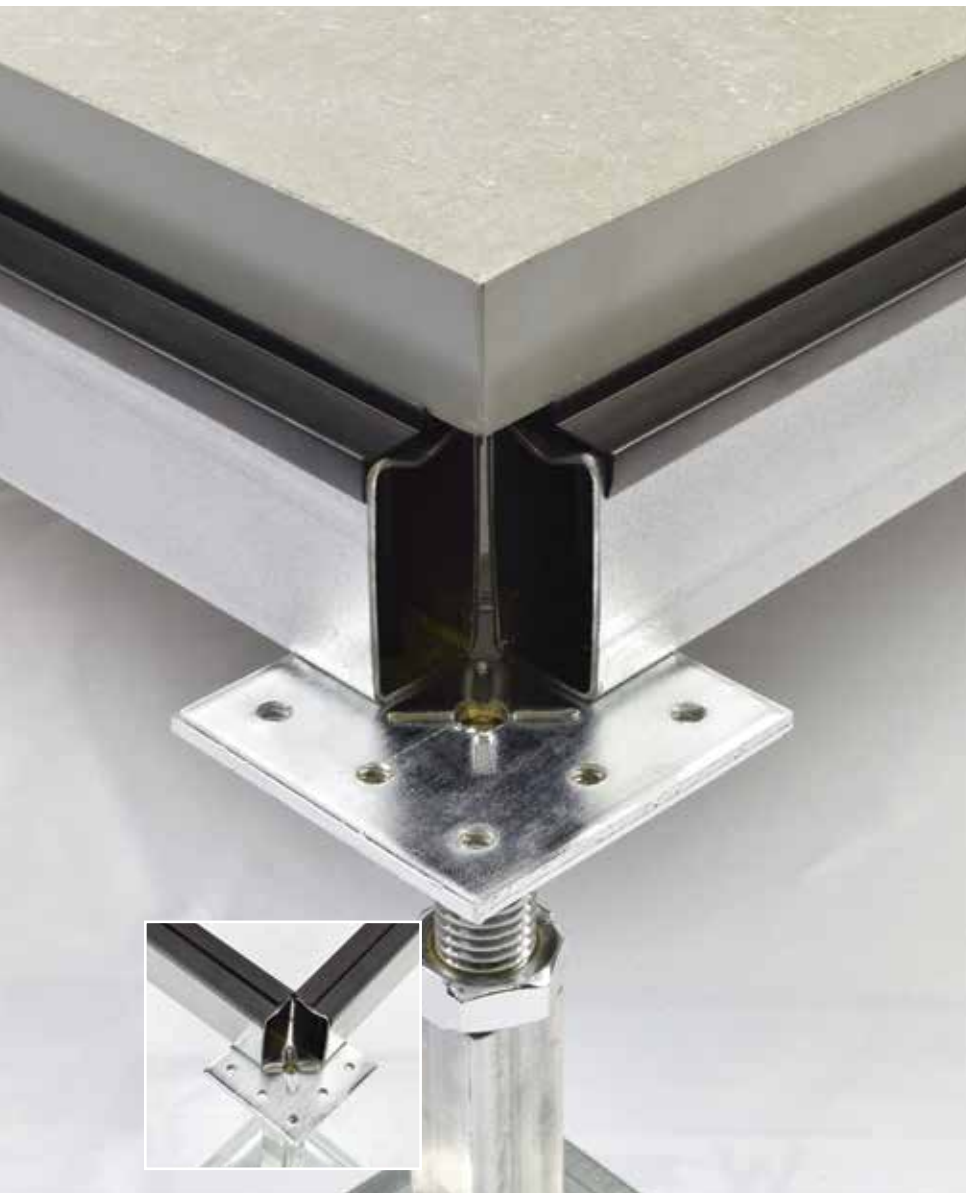
Understructure System Box Beam Bolted Stringer

For STONEWORKS® Panels

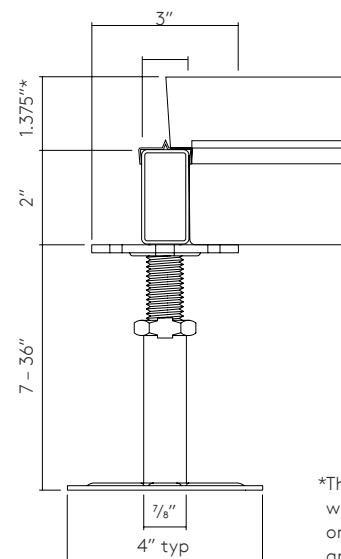
Tate's Box Beam stringer system is designed for use with any STONEWORKS® panel.

Key Performance Characteristics

- Offering 2,500 lb design load
- 2,000 lb, 10 pass and 10,000 pass rolling loads
- Panels are gravity-held in understructure for fast removal and replacement
- Stringers provide lateral resistance to heavy rolling loads and seismic loading
- Seismic force-resistant pedestals are available that limit or eliminate the need for special bracing
- Typical floor heights from 7"-36" (17.5-90 cm)



Profile



*This measurement will differ depending on the panel type and chosen finish.

Understructure System Bison Exterior

For STONEWORKS® Outdoor Panels

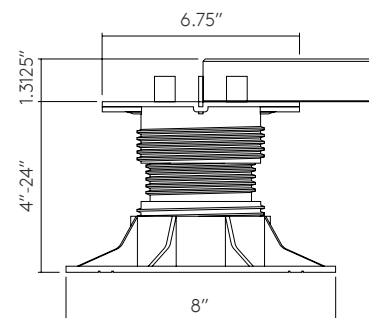
Bison pedestals create level rooftop decks over sloped surfaces. Bison pedestals elevate and support STONEWORKS Outdoor panels for sophisticated, commercial grade decking.



Key Performance Characteristics

- Stringerless system with panel installed directly to pedestal head
- The 1/8" spacer tabs on the pedestal heads create approximately 1/8" gap between panels.
- Panels are gravity held in understructure
- STONEWORKS panels have been tested using Bison Versadjust or Level.It pedestals
- Integral base leveling to correct for sloped substrates

Profile



Accessories



Plenum Divider
with Hat Channel



Seismic Brace



Ramp Shoe

Access Floor Accessories

Tate offers a variety of accessories to complete your raised floor installation. From ramps and steps to plenum dividers, bridges and seismic braces, we supply everything required to make your project a success. Find details on the full range of accessories at www.tateinc.com.



Swirl Diffuser

Designed for use with an Underfloor Air Distribution system, Tate's swirl diffuser provides complete flexibility and personal comfort control. Tate's swirl diffuser provides greater personal comfort control over thermostatically controlled variable-air-volume ceiling diffusers by allowing the occupant the ability to control the volume and placement of the airflow in their space.



UFAD Grommets

Tate's Under Floor Air Distribution (UFAD) grommets are designed to nearly eliminate air leakage in buildings with Under Floor Air Distribution systems. We offer many different sizes to seal openings in an access floor panel. Our grommets are made from fire resistant ABS or brushed aluminum to complement your décor. These grommets are for use in office areas only.

If you need something you don't see here or are looking for a modification to fit the specific needs of your project, please contact us at 800-231-7788 or e-mail Technical Services at info@tateinc.com.



Accessibility

The continuous evolution of access flooring systems means today's high-performance buildings can maintain accessibility to the underfloor pathways while still having a wide selection of high-end architectural finishes. With each modular panel capable of being easily removed anywhere along the service path, access floors give you total control over your building's service distribution systems.



Flexibility

Today's business landscape is all about being agile, and your workspace needs to maintain the same flexibility your business does in order to stay competitive — maximizing both individual comfort and worker efficiency while minimizing costs. The modular design of Tate's access floor systems allows you to easily relocate service terminals and air diffusers within minutes. Simply swap the panels and get back to your business.



Reconfigurability

A step beyond flexibility, Tate's access floors help ensure that your business is future proof, allowing you to completely reconfigure your workspace as your business grows and changes. Tate access floors make it simple to replace one finish with another or add/remove partition walls — allowing your building's aesthetic to adapt to your needs both today and in the future.

02



Architectural Finishes

Your Vision. Our Experience.

Tate offers an exciting selection of high-end finishes ranging from STONEWORKS®, our new line of integrated finishes, to laminated options like porcelain, wood, or resilients, and freelay products such as PosiTile®, a one-to-one fit carpet tile, or Attiro®, a magnetically backed plank wood. Architects and designers now have practically unlimited freedom to create a truly unique look for any project while still maintaining the versatility and convenience offered by an access floor.



Time

Tate access floors panels and high-end architectural finishes arrive at your work site as a finished product which is installation-ready. This means a quicker, more efficient installation process and an earlier move-in date for your project.



Cost Savings

Time is money, which is why Tate access floors are the smart choice for any project. Design assisted solutions arriving installation-ready from the factory means fewer on-site trades and less time spent during construction overall. That's money that goes straight to your bottom line.

Architectural Finishes

STONEWORKS®

Tate's new STONEWORKS® line of access floor panels combines aesthetic and thoughtfully engineered structural components into one complete integrated product. With an array of finish, color, and surface texture options, compromising design for flexibility will never be an architectural obstacle again.

The new STONEWORKS® line includes Classic Concrete, Decorative Concrete, Slate, Granite, and Terrazzo. The strength and utility of an integrated finish panel mean these new offerings can be used to enhance the design aesthetic of a wide variety of applications. The bottom of STONEWORKS® panels are laminated with an E-Coated steel sheet or pan for stability, and the panels are supported by freestanding, heavy-duty or box beam bolted stringer understructure.



STONEWORKS® Finish Options



Classic Concrete



Decorative Concrete



Slate



Granite



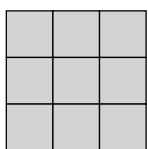
Terrazzo

CSC Headquarters – Wilmington, DE | Architect: NORR | Finishes: STONEWORKS® Classic Concrete, Stacked Wood and Carpet

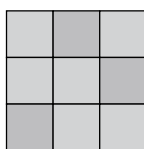
Natural Variation

Tate's STONEWORKS® panels are natural stone products, and all natural stone products contain some degree of variation, which enhances the natural look of the finish. This variation comes from differences in color or aggregate distribution.

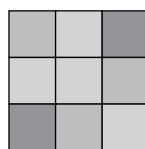
Natural stone panels fall into one of 3 categories:



V1
Slight
Variation



V2
Moderate
Variation



V3
Substantial
Variation

Architectural Finishes

STONEWORKS®: Classic Concrete

The STONEWORKS® Classic Concrete access floor panel offers the ultimate combination of appearance and functionality. The concrete panel combines aesthetic and structural components into one complete integrated product, and is available with a brushed or honed surface texture.

The edge of the brushed panel is factory laminated with a color matched plastic banding. The exposed aggregate finish is available with edge banding or an eased edge that can be installed without stringers. As the panel is made from natural products, moderate shade and color tone differences will occur and is the reason this product is assigned a V2 Variation Rating.



Available Textures



Brushed



Honed

Available Panel Seams



Eased edge



Edge banded

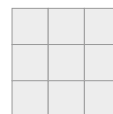
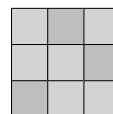
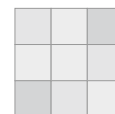


Toyota Headquarters – Plano, TX | Architect: Corgan | Finishes: STONEWORKS® Classic Concrete and Laminated Terrazzo

Key Performance Characteristics

- Supported by heavy-duty bolted stringer or box beam bolted stringer understructure system
- Freestanding pedestal can be used with eased edge panel
- Gray cement with blue/gray/white aggregate
- Color-matched edge banding protects the edge during removal
- Sealed in the field after installation
- Available with a brushed or honed surface texture

Variation

V1
Slight
VariationV2
Moderate
VariationV3
Substantial
Variation

Architectural Finishes

STONWORKS®: Decorative Concrete

STONWORKS® Decorative Concrete panels will transform your space with style, durability, and functionality. The Decorative Concrete panel combines aesthetic and structural components into one complete integrated product, and is available in multiple color options with a brushed surface texture.

The edge of the panel is factory laminated with a color matched plastic banding which creates a faux grout line and provides protection during removal. As the panel is made from natural products, moderate shade and color tone differences will occur and, for this reason, Decorative Concrete has been assigned a V2 Variation Rating.



Available Colors



Limestone



Hay



Camel



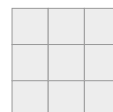
Midnight

STONEWORKS® Decorative Concrete – Camel

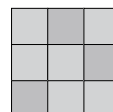
Key Performance Characteristics

- Supported by heavy-duty bolted stringer or box beam bolted stringer understructure system
- Color-matched edge banding protects the edge during removal
- Sealed in the field after installation with either a natural look or color enhancing sealer
- Available with a brushed surface texture

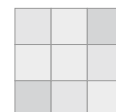
Variation



V1
Slight
Variation



V2
Moderate
Variation



V3
Substantial
Variation

Architectural Finishes

STONEWORKS®: Slate

STONEWORKS® Slate panels combine aesthetic and structural components into one complete integrated product, and are available in Midnight and Limestone color options. The surface is precision molded to emulate the ridged texture of natural slate and capture its rustic appeal.

The edge of the panel is factory laminated with a color matched plastic banding which creates a faux grout line and provides protection during removal. As the panel is made from natural products, moderate shade and color tone differences will occur and, for this reason, Slate has been assigned a V2 Variation Rating.



Available Colors



Midnight



Limestone

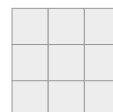
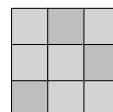
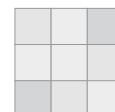


Tate Headquarters – Jessup, MD | Finish: STONEWORKS® Slate – Midnight

Key Performance Characteristics

- Supported by heavy-duty bolted stringer or box beam bolted stringer understructure system
- Ridged surface texture which emulates a natural slate finish
- Color-matched edge banding protects the edge during removal
- Must be sealed in the field after installation with a color enhancing sealer
- Available with a slate surface texture

Variation

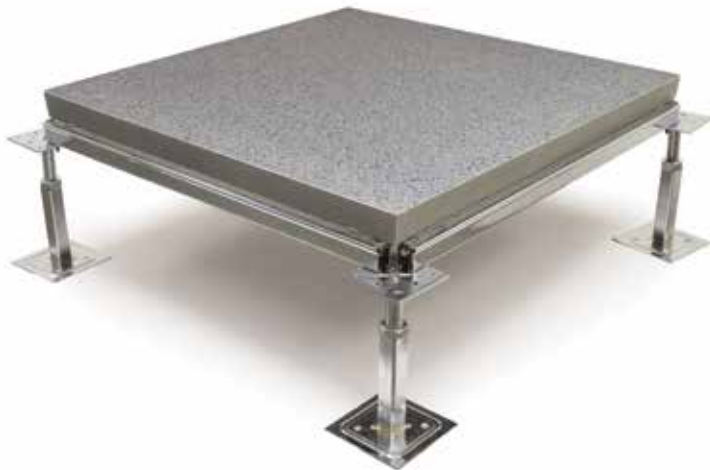
V1
Slight
VariationV2
Moderate
VariationV3
Substantial
Variation

Architectural Finishes

STONEWORKS®: Granite

Attractive, durable, and versatile, STONEWORKS® Granite panels bring a sense of elegant beauty to any project. The Granite panel combines aesthetic and structural components into one complete integrated product, and is available in multiple colors with a beautiful polished surface texture.

The edge of the panel can be factory laminated with a color matched plastic banding to create a faux grout line, or with an applied eased edge at the surface. As the panel is made from natural products, slight shade and color tone differences will occur and, for this reason, Granite has been assigned a V1 Variation Rating.



Available Colors



Fog



Black Pearl



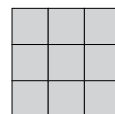
Arctic Storm

STONEWORKS Granite - Fog

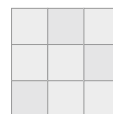
Key Performance Characteristics

- Smooth surface for easy maintenance
- Supported by heavy-duty bolted stringer or box beam bolted stringer understructure system
- Freestanding pedestal can be used with eased edge panel
- Color-matched edge banding protects the edge during removal
- Must be sealed in the field after installation with a color enhancing sealer
- Available with a 400 grit polished surface texture

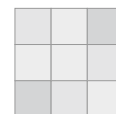
Variation



V1
Slight
Variation



V2
Moderate
Variation



V3
Substantial
Variation

Architectural Finishes

STONEWORKS®:

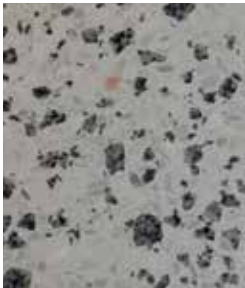
Terrazzo

STONEWORKS® Terrazzo panels bring timeless beauty and stylish durability to any application, and are available in multiple color options with a stunning polished surface texture.

These panels combine a highly controlled mixture of colored chips, producing a terrazzo finish, with structural components into one complete integrated product. The edge of the panel can be factory laminated with a color matched plastic banding to create a faux grout line, or with an applied eased edge at the surface. As the panel is made from natural products, slight shade and color tone differences will occur and, for this reason, Terrazzo has been assigned a V1 Variation Rating.



Available Colors



Smoke



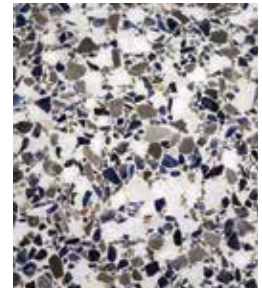
Storm



Sandstorm



Frost



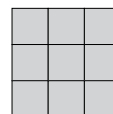
Polar Ice

STONEWORKS® Terrazzo – Smoke

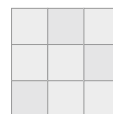
Key Performance Characteristics

- Smooth surface for easy maintenance
- Supported by heavy-duty bolted stringer or box beam bolted stringer understructure system
- Freestanding pedestal can be used with eased edge panel
- Color-matched edge banding protects the edge during removal
- Must be sealed in the field after installation with a color enhancing sealer
- Available with a 400 grit polished surface texture

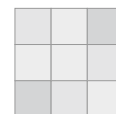
Variation



V1
Slight
Variation



V2
Moderate
Variation



V3
Substantial
Variation

Architectural Finishes

Laminated Finishes

Tate works with top manufacturers to offer a wide range of finishes including: porcelain, wood, resilients, high pressure laminates (HPL) and static control vinyl. Factory laminated finishes offer a wide range of benefits including easy access to underfloor services, reconfigurability and maintenance. Having the finish applied directly to the access floor panels, reduces installation time and lowers cost.

HPL and static control vinyl finishes are designed to control static discharge which helps protect sensitive equipment in critical applications such as data centers and labs by keeping static away.



Laminated Finish Options



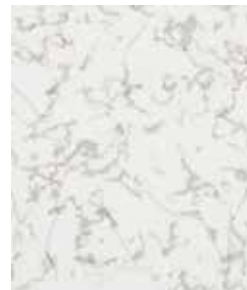
Porcelain



Wood



Resilients



HPL



ESD Vinyl



ValueAct Capital Headquarters – San Francisco, CA | Architect: Gould Evans | Finish: Porcelain

Key Performance Characteristics

- Wide range of surface and finish options for any application
- Engineered to maintain access to underfloor services
- Finishes can be removed and reconfigured as needed
- Eliminates the need for leveling compounds or backerboards
- Customized transitions are available
- Fast easy installation reduces cost
- Static control Conductive HPL is available

Architectural Finishes

Laminated Porcelain

Tate's line of laminated porcelain for ConCore® raised floor offers the ultimate combination of aesthetics and flexibility. With a variety of aesthetics and colors to choose from, these tiles can enhance the architectural form and space of a building. The porcelain panels come in two primary designs: one-piece and multi-piece, and the factory laminated porcelain access floor panels come with an edge banding that produces clean even lines that appear more like grouted tiles.



Designs

The factory laminated porcelain panels are available in two primary designs: one-piece and multi-piece, and come with an edge banding that produces clean even lines that appear more like grouted tiles.



One-piece



Multi-piece

Key Performance Characteristics

- Laminated to ConCore® access floor panels with bolted stringer understructure
- Available in single and multi-piece design
- Available in a variety of colors and styles
- Supported by a bolted stringer system
- Tiles designed to meet precise specifications
- Edge banding protects against chipping
- Easy to clean maintenance



Kellogg School of Management, Northwestern University – Evanston, IL | Architect: KPMB | Finish: Multi-Piece Porcelain

Styles



Cement



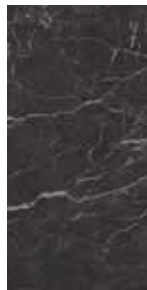
Granite



Limestone



Metallic



Marble



Monolithic



Natural Stone



Wood

Architectural Finishes

Laminated Wood

Tate's wood panels offer a long-lasting and versatile finish that enhances the look of your application. The plank design is available in a variety of species and can be laminated to the composite board panel with color match plastic edge banding or on a ConCore® panel with a monolithic edge.



Design

Factory laminated Plank wood panels are available in a wide variety of species.

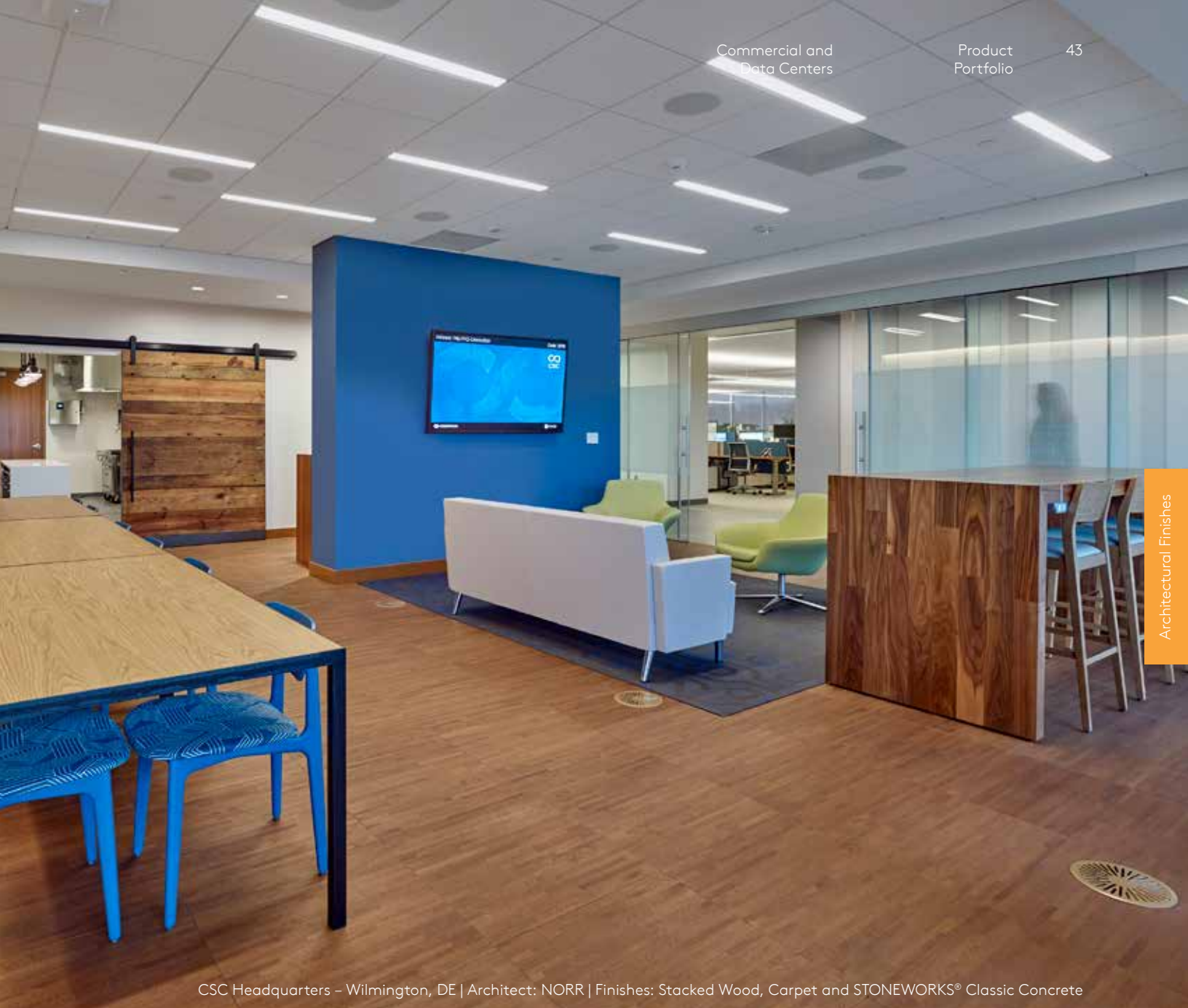


Plank



Key Performance Characteristics

- Available in a variety of species and designs
- Long-lasting natural architectural finish
- Laminated to composite board or ConCore® panel
- Protective edge banding protects the surface edge from chipping



CSC Headquarters – Wilmington, DE | Architect: NORR | Finishes: Stacked Wood, Carpet and STONEWORKS® Classic Concrete

Featured Plank Wood Species (for a complete listing of available species please visit TateInc.com)



Afrormosia



Doussie



Iroko



Oak



Teak



Walnut



Wenge

Architectural Finishes

Laminated Resilients

Resilient tiles are a durable and easily maintained finish and are available in an almost unlimited selection of colors, patterns, and textures. Tate works with dozens of manufacturers who offer a wide range of resilient finishes from linoleum and vinyl to rubber, LVT, HPL and ESD vinyl.



Resilient Finish Options



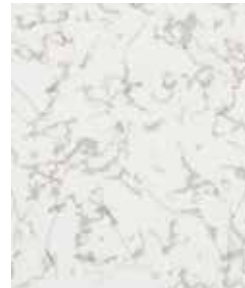
Linoleum



Vinyl



Rubber



HPL



ESD Vinyl



Case Western Reserve University and Cleveland Clinic, Samson Pavilion, Cleveland, OH
Architect: Foster + Partners & DLR Group | Finishes: Rubber and Carpet

Key Performance Characteristics

- Can offer specific acoustical, conductive, and slip resistant qualities
- Wide range of finish options with a variety of patterns and colors
- Factory laminated for perfect one-to-one alignment
- Linoleum, vinyl and rubber are laminated to composite board to provide a smoother surface
- Supported by a Heavy Duty Stringer system
- Tapered edge allows for easy accessibility to underfloor areas
- Edge banding protects the surface edge from chipping
- HPL and ESD Vinyl are laminated to ConCore or All Steel supported on a Bolted Stringer system

Architectural Finishes Custom Panels and Designs

Tate's state-of-the-art engineering and manufacturing capabilities allow us to customize our customer's projects even further. By combining Tate's more than 50 years of experience as the access flooring industry leader with your vision, you are guaranteed to capture the unique look and feel you need for your next project.



Custom Panel Options



Transition Panel



Inlay Panel

Salesforce East – San Francisco, CA | Architect: Skidmore, Owings & Merrill | Finishes: Plank Wood, Multi-Piece Porcelain and Carpet

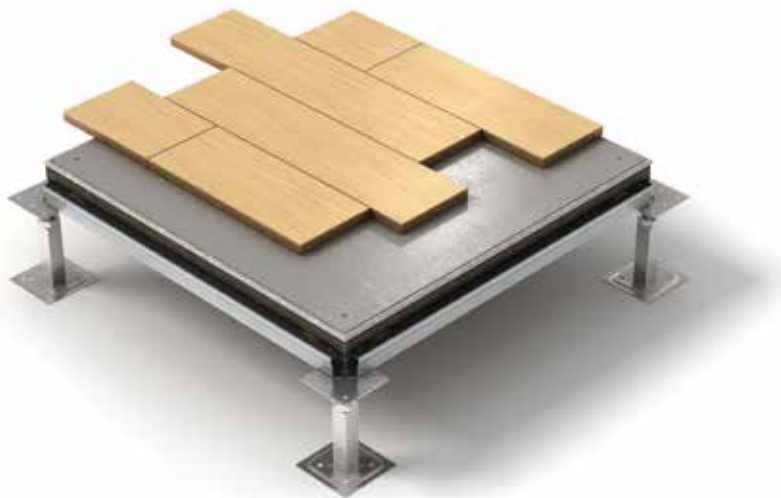
Key Performance Characteristics

- Able to blend multiple finishes on single panel
- Customized Inlays, designs, corporate logos and more
- Maintains accessibility, flexibility, and reconfigurability

Architectural Finishes

Attiro®

Style meets function with Attiro® magnetic backed wood. The result of impeccable attention to detail, from the sustainable lumber we source to the master craftsmen who perfect it. Since Attiro® uses a magnetic base to secure to the raised floor panels, it makes accessing underfloor voids effortless while still maintaining the beauty of engineered oak. With Attiro® you never have to compromise on style or function again.



Attiro® Staggered Plank Layout





Bloomberg Headquarters – London, England | Architect: Foster + Partners | Finishes: Attiro® Magnetic Backed Wood

Key Performance Characteristics

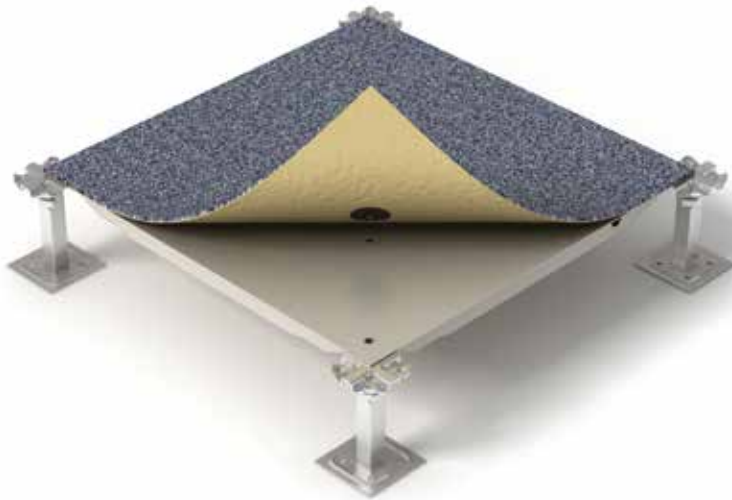
- Available in a range of 16 shades to suit any taste and interior
- Beautiful brushed finish with a wax oil lacquer
- Eliminates previous limitations on design and accessibility
- Works with Tate Classic Concrete panel with eased edge and laminated steel top sheet
- Durable, easy to maintain, and can be walked on immediately after installation
- Available on Freestanding or Heavy Duty Bolted Stringer understructure



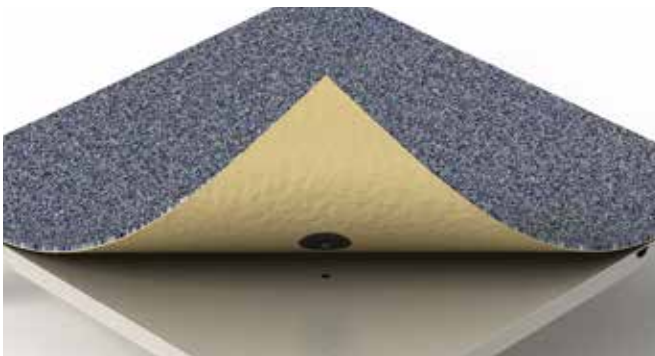
Architectural Finishes

PosiTile® Carpet

Each PosiTile® carpet module is engineered to match one-to-one with Tate ConCore® and All Steel access floor panels. The combination of carpet and panel preserve the flexibility of the underfloor service distribution system and allow for the reuse of carpet tiles during layout changes. PosiTile® maintains easy accessibility and reduces waste.



PosiTile® Ultrasonically Welded Button

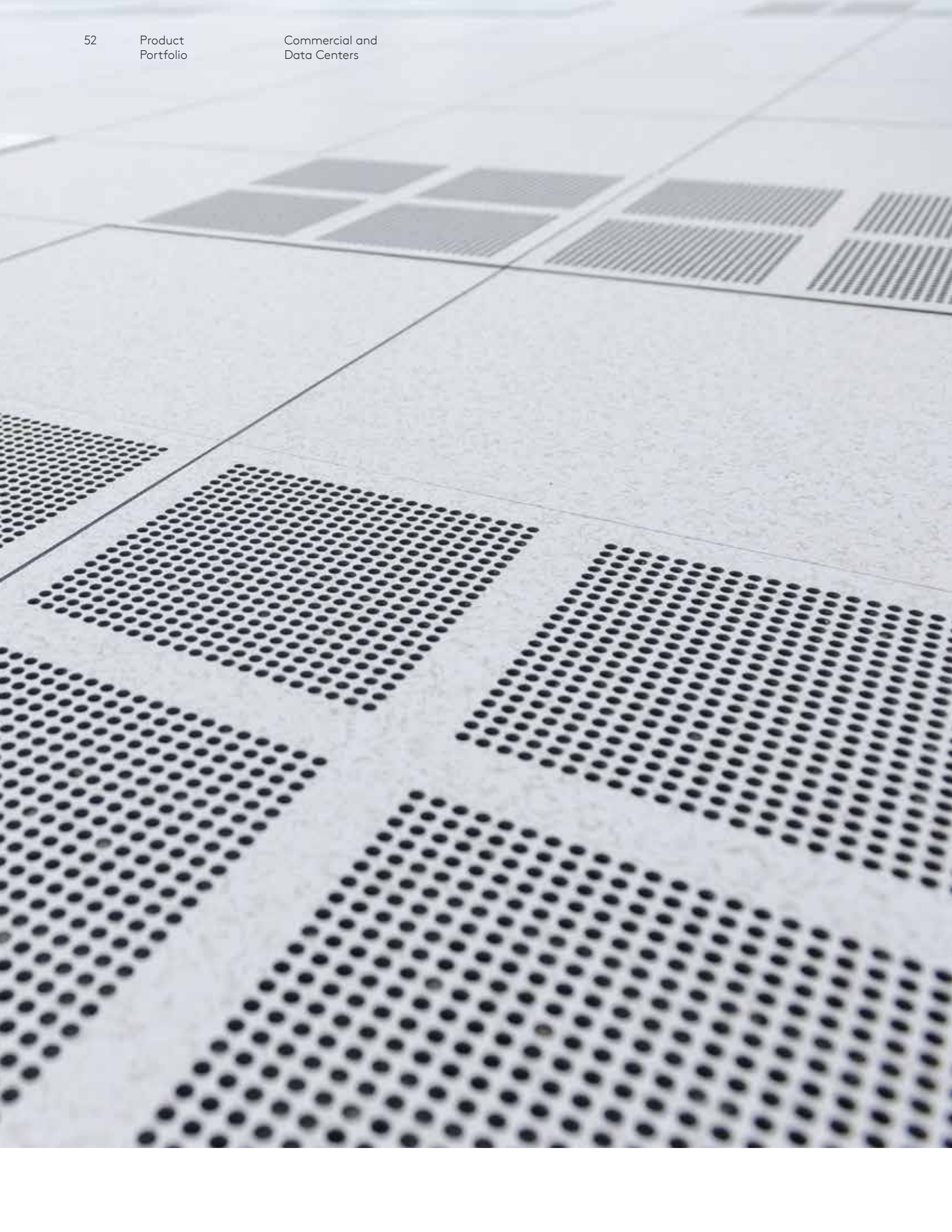




Jupiter Township Water Treatment Facility – Jupiter, FL | Architect: Song + Associates | Finishes: Carpet and Porcelain

Key Performance Characteristics

- Reduces move time
- No additional attic stock
- Eliminates waste due to churn
- One-to-one fit with ConCore® and All Steel access floor panels
- Supported by a Posilock system



03

Airflow Panels & Controls



Custom Solutions for Your Unique Challenges

Tate is the leading manufacturer of data center solutions, and our manufacturing process allows for the customization of containment and structural ceiling products to fit the needs of your specific facility. Tate offers application engineering, as well as design and specification assistance to develop the solution your data center needs.

Our world-class manufacturing plants have the flexibility to create modular solutions quickly with up-front cost optimization and Tate's in-house engineering team has the experience and industry knowledge to design the best solutions and guide your project from concept to completion.

Whatever your challenges might be, Tate is the single-source solution builder your data center needs.

Leverage Our Experience

When it comes to data center solutions from Tate, you have options. Our application engineering support and custom manufacturing capabilities give you the ability to pick and choose a tailor-made solution that is the perfect fit for your data center.

And the best part is that, even though Tate's containment and structural ceiling systems are designed to fit your exact specifications, they are still fully compatible with all of Tate's other data center products such as access flooring, airflow panels and controls, and more.

Airflow Panels & Controls

GrateAire® Panels

Aisle Level Containment Vertical Airflow Panels

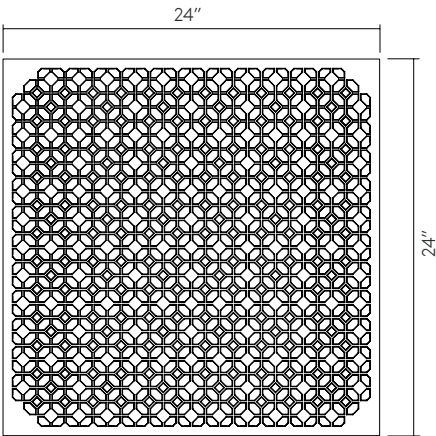
Tate's aluminum GrateAire® offers high volume airflow for physically contained aisles with high heat densities. With 56% open area the lightweight aluminum panel is ideal for areas that need high airflow and load capacity.



Cool up to 16 kW with
2100 CFM @ .10" H₂O
in a contained aisle.

Profile

Top View



Side View



Key Performance Characteristics

- GrateAire® die-cast aluminum panels are compatible with any 24" or 60 cm bolted stringer systems
- Cools up to 16kw per rack in a contained aisle
- High rolling load capacity (1000 lbs / 800 lbs)
- Available with top surface adjustable damper
- Available with an unpainted textured surface or epoxy powder coatings
- Interchangeable with Tate's full line of laminated raised floor panels in a stringer system

GrateAire® Load Performance Chart*

Airflow Panel	Under-structure	System Weight (lbs/sqft)	Static Loads (lbs)			Rolling Loads (lbs)		Impact Load (lbs)	Capture Index* (%)	Open Area (%)
			Design Load	Safety Factor	Ultimate Load	10 Passes	10,000 Passes			
GrateAire	Bolted Stringer	6.25 (30 kg/m²)	1000 (4.4 kN)	Min. > 2	>2000 (8.9 kN)	1000 (4.4 kN)	800 (3.6 kN)	100 (45 kg)	50	56

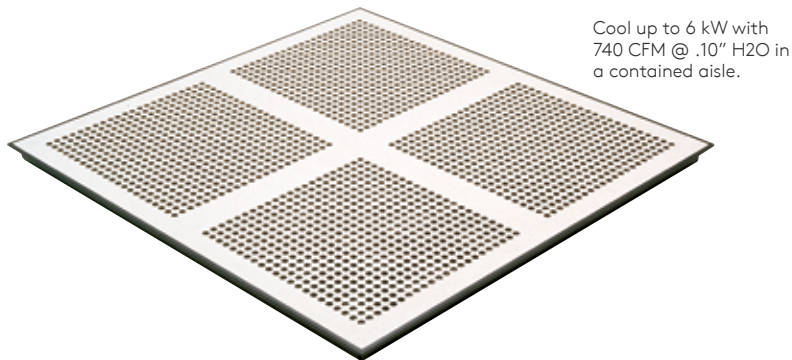
All tests are performed using CISCAs Recommended Test Procedures for Access Floors with the exception of Design Load.
1. System Design Load is based on permanent set ≤ 0.010" and is verified by loading panels in accordance with the CISCAs concentrated load method but with panels installed on actual understructure instead of steel blocks. (Testing on blocks does not represent performance of an actual installation.) Ultimate, Rolling, and Impact Load tests are performed using CISCAs Test Procedures.
2. Safety Factor is Ultimate Load divided by Design Load.

Airflow Panels & Controls

Perforated Panels

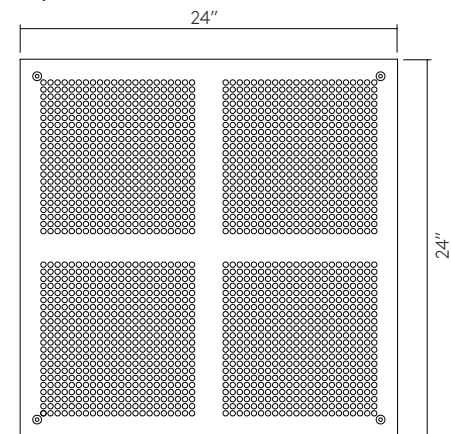
Aisle Level Containment Vertical Airflow Panels

Tate's perforated steel panels are available with a range of load performance characteristics and a 25% open area. They represent the most economical approach to supplying air in a contained cold aisle.

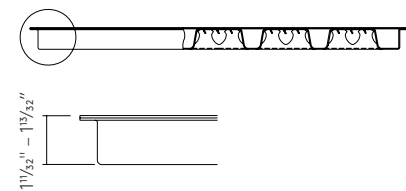


Profile

Top View



Side View



Key Performance Characteristics

- Compatible with any 24" or 60 cm stringer systems
- Strong design loads with safety factors of 2
- Available with top surface adjustable damper
- Steel perforated panels are available with high pressure laminate or ESD vinyl
- Interchangeable with laminated ConCore® and All Steel panels in a stringer system

Standard Perforated Panels Load Performance Chart*

Airflow Panel	Under-structure	System Weight (lbs/sqft)	Static Loads (lbs)			Rolling Loads (lbs)		Impact Load (lbs)	Capture Index* (%)	Open Area (%)
			Design Load	Safety Factor	Ultimate Load	10 Passes	10,000 Passes			
Perf 800	Bolted Stringer	7.0 (34 kg/m ²)	800 (3.6 kN)	Min. > 2	>1600 (7.1 kN)	–	–	150 (68 kg)	50	25
Perf 1000	Bolted Stringer	7.5 (37 kg/m ²)	1000 (4.4 kN)	Min. > 2	>2000 (8.9 kN)	–	–	150 (68 kg)	50	25
Perf 1250	Bolted Stringer	8.25 (40 kg/m ²)	1250 (5.6 kN)	Min. > 2	>2500 (11.1 kN)	–	–	150 (68 kg)	50	25

All tests are performed using CISCAs Recommended Test Procedures for Access Floors with the exception of Design Load.

1. System Design Load is based on permanent set $\leq 0.010"$ and is verified by loading panels in accordance with the CISCAs concentrated load method but with panels installed on actual understructure instead of steel blocks. (Testing on blocks does not represent performance of an actual installation.) Ultimate, Rolling, and Impact Load tests are performed using CISCAs Test Procedures.

2. Safety Factor is Ultimate Load divided by Design Load.

Airflow Panels & Controls

DirectAire® Panels

Strong, Efficient, High Capacity Directional Airflow Panels

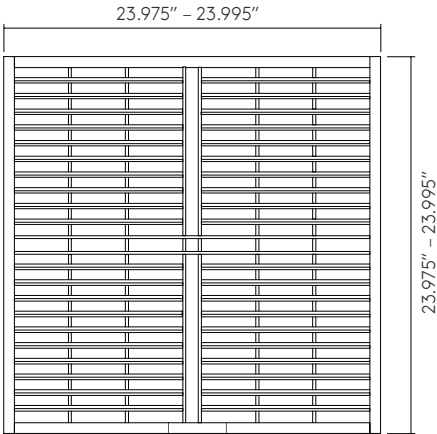
Ideal for creating a virtual containment system, the steel DirectAire® panel directs the airflow toward the server rack to significantly reduce bypass air. DirectAire is designed to evenly distribute airflow across the full height of a standard 42U rack. DirectAire X2 is designed to divide the airflow evenly in two directions to provide even distribution to racks on both sides of a cold aisle.



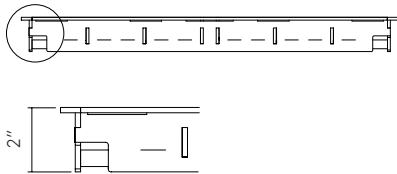
Cool over 19 kW with
2594 CFM @ .10" H2O

Profile

Top View



Side View



Key Performance Characteristics

- Reduce capital expenditures on cooling infrastructure by up to 40%
- Save up to 40% in annual fan energy without the use of containment
- 68% open area provides 2,594 CFM @ .1" H2O
- Cool over 19 kW per rack @ .1" H2O
- DirectAire X2 cools up to 10 kW per rack @ .1" H2O
- 2,500 lbs design load
- 1,500 lbs 10 pass rolling load capacity
- Available in 24" and 60 cm panel sizes

DirectAire® Load Performance Chart*

Airflow Panel	Under-structure	System Weight (lbs/sqft)	Static Loads (lbs)			Rolling Loads (lbs)		Impact Load (lbs)	Capture Index* (%)	Open Area (%)
			Design Load	Safety Factor	Ultimate Load	10 Passes	10,000 Passes			
DirectAire®	Bolted Stringer	13.0 (63 kg/m²)	2500 (11.1 kN)	Min. > 2	>5000 (22.2 kN)	1500 (6.67 kN)	1500 (6.67 kN)	200 (91 kg)	93	68
DirectAire® X2	Bolted Stringer	13.0 (63 kg/m²)	2500 (11.1 kN)	Min. > 2	>5000 (22.2 kN)	1500 (6.67 kN)	1500 (6.67 kN)	200 (91 kg)	93	68

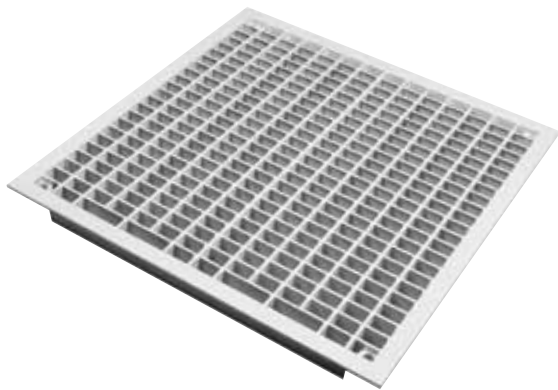
All tests are performed using CISCA's Recommended Test Procedures for Access Floors with the exception of Design Load.
1. System Design Load is based on permanent set ≤ 0.010" and is verified by loading panels in accordance with the CISCA concentrated load method but with panels installed on actual understructure instead of steel blocks. (Testing on blocks does not represent performance of an actual installation.) Ultimate, Rolling, and Impact Load tests are performed using CISCA Test Procedures.
2. Safety Factor is Ultimate Load divided by Design Load.

Airflow Panels & Controls

DirectAire® AL Panels

Strong, Efficient, High Capacity Directional Airflow Panels

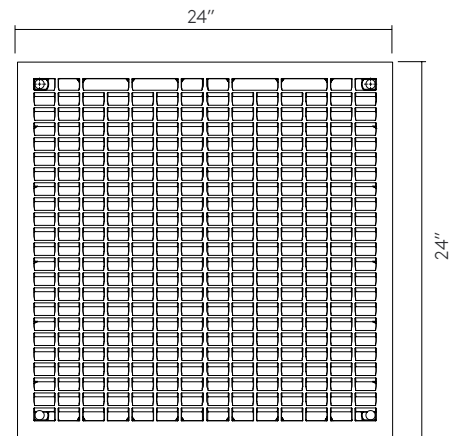
The DirectAire® AL is an all aluminum airflow panel that provides the same directional airflow benefits of the steel DirectAire. This allows the panel to provide similar cooling capacities with a panel that is 40% lighter.



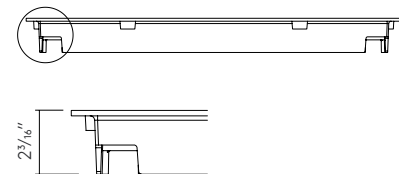
Cool over 18 kW with
2451 CFM @ .10" H₂O

Profile

Top View



Side View



Key Performance Characteristics

- Die-cast aluminum construction
- 40% lighter than a steel DirectAire
- 60% open area provides 2,451 CFM @ .1" H₂O
- Cools over 18 kW per rack @ .1" H₂O
- 1,500 lbs design load
- 1,250 lbs 10 pass rolling load capacity
- Surface adjustable and automatic damper options
- Available in 24" and 60 cm panel sizes

DirectAire® AL Load Performance Chart*

Airflow Panel	Under-structure	System Weight (lbs/sqft)	Static Loads (lbs)			Rolling Loads (lbs)		Impact Load (lbs)	Capture Index* (%)	Open Area (%)
			Design Load	Safety Factor	Ultimate Load	10 Passes	10,000 Passes			
DirectAire® AL	Bolted Stringer	7.4 (36 kg/m ²)	1500 (6.7 kN)	Min. > 2	>3000 (13.3 kN)	1250 (5.6 kN)	1000 (4.4 kN)	150 (68kg)	93	60

All tests are performed using CISCAs Recommended Test Procedures for Access Floors with the exception of Design Load.

1. System Design Load is based on permanent set $\leq 0.010"$ and is verified by loading panels in accordance with the CISCAs concentrated load method but with panels installed on actual understructure instead of steel blocks. (Testing on blocks does not represent performance of an actual installation.) Ultimate, Rolling, and Impact Load tests are performed using CISCAs Test Procedures.

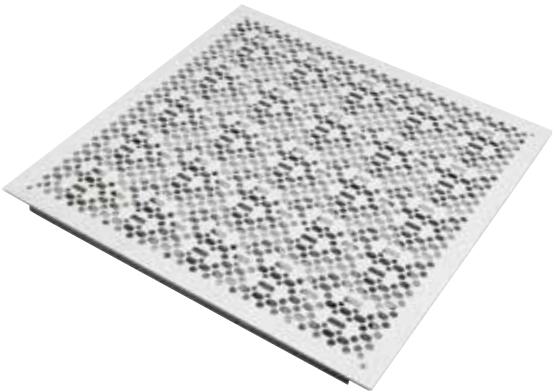
2. Safety Factor is Ultimate Load divided by Design Load.

Airflow Panels & Controls

DirectPerf® 32% Panels

Cool the Same Load as Vertical Plume Panels with Half the Airflow

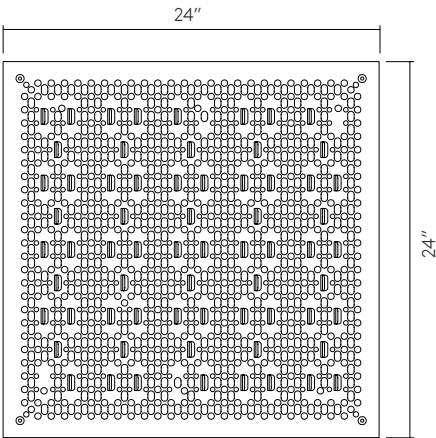
In uncontained spaces directional airflow provided by a DirectPerf 32% panel provides nearly the same cooling capacity as a standard 56% open area grate using about half the airflow.



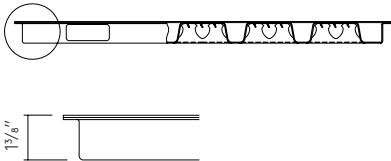
Cool up to 8 kW with
1121 CFM @ .10" H₂O

Profile

Top View



Side View



Key Performance Characteristics

- Same kW cooling capacity as GrateAire
- 32% open area delivers 1,121 CFM @ .1" H₂O when installed without a damper
- Directional airflow achieves a 88% capture index
- Cools up to 8 kW per rack
- Can save over 40% in annual fan energy without the use of containment
- Easily integrates into an existing 24" and 60 cm raised floor systems

DirectPerf® 32% Load Performance Chart*

Airflow Panel	Under-structure	System Weight (lbs/sqft)	Static Loads (lbs)			Rolling Loads (lbs)		Impact Load (lbs)	Capture Index* (%)	Open Area (%)
			Design Load	Safety Factor	Ultimate Load	10 Passes	10,000 Passes			
DirectPerf 32	Bolted Stringer	6.25 (30 kg/m ²)	1250 (5.6 kN)	Min. > 2	>2500 (11.1 kN)	-	-	150 (68 kg)	88	32

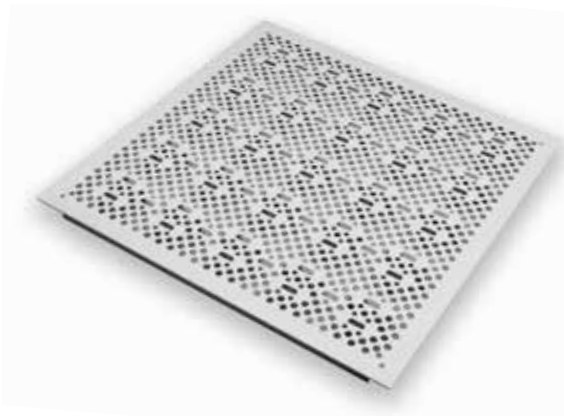
All tests are performed using CISCAs Recommended Test Procedures for Access Floors with the exception of Design Load.
1. System Design Load is based on permanent set ≤ 0.010" and is verified by loading panels in accordance with the CISCAs concentrated load method but with panels installed on actual understructure instead of steel blocks. (Testing on blocks does not represent performance of an actual installation.) Ultimate, Rolling, and Impact Load tests are performed using CISCAs Test Procedures.
2. Safety Factor is Ultimate Load divided by Design Load.

Airflow Panels & Controls

DirectPerf® 25% Panels

Cool the Same Load as Vertical Plume Panels with Half the Airflow

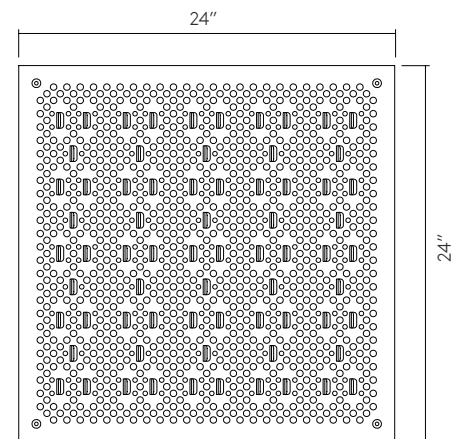
Directional Perf 25% utilizes directional airflow toward the server rack to significantly improve energy efficiency and reduce bypass air.



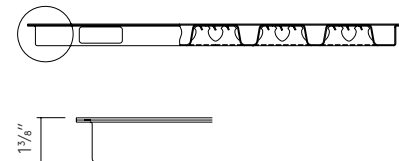
Cool up to 6 kW with
765 CFM @ .10" H₂O

Profile

Top View



Side View



Key Performance Characteristics

- 25% open area delivers 765 CFM @ .1" H₂O when installed without a damper
- Directional airflow achieves a 93% capture index
- Cools up to 6 kW per rack
- Can save over 40% in annual fan energy without the use of containment
- Easily integrates into an existing 24" and 60 cm raised floor systems

DirectPerf® 25% Load Performance Chart*

Airflow Panel	Under-structure	System Weight (lbs/sqft)	Static Loads (lbs)			Rolling Loads (lbs)		Impact Load (lbs)	Capture Index* (%)	Open Area (%)
			Design Load	Safety Factor	Ultimate Load	10 Passes	10,000 Passes			
DirectPerf 25	Bolted Stringer	6.85 (33 kg/m ²)	1250 (5.6 kN)	Min. > 2	>2500 (11.1 kN)	–	–	150 (68kg)	93	25

All tests are performed using CISCAs Recommended Test Procedures for Access Floors with the exception of Design Load.

1. System Design Load is based on permanent set $\leq 0.010"$ and is verified by loading panels in accordance with the CISCAs concentrated load method but with panels installed on actual understructure instead of steel blocks. (Testing on blocks does not represent performance of an actual installation.) Ultimate, Rolling, and Impact Load tests are performed using CISCAs Test Procedures.

2. Safety Factor is Ultimate Load divided by Design Load.

Airflow Panels & Controls

Manual Airflow Controls

Manual Zone Control for Diverse and Partially Loaded Racks

Slide Damper

Tate's slide damper is used to manually control airflow under a GrateAire or Perforated panel. The slide damper is mechanically attached to the panel to provide airflow control.



Manual Damper for
use with GrateAire®
and Perf Panels

Opposed Blade Damper (OBD)

Tate's Single-zone Opposed Blade Damper offers a dramatic airflow improvement over traditional manual slide dampers. It features a nearly infinite range of adjustment and very little airflow resistance. Easy access through the panel's surface allows for quick adjustment of airflow balancing to IT hardware.



Opposed Blade
Damper for use with
DirectAire®, DirectAire®
AI, DirectPerf 32% and
GrateAire® Panels

Key Performance Characteristics

- Easily adjustable from above without panel removal
- Mechanically attached to panel for easy underfloor access

Key Performance Characteristics

- Provides more airflow at 100% open than slide dampers
- Easily adjustable from above without panel removal
- Drop-in design is for use with DirectAire® and allows for easy retrofits under airflow panels
- Field mounted design available for DirectAire AI, DirectPerf 32% and GrateAire panels.

Dual-Zone Opposed Blade Damper

The dual-zone damper allows the user to control the airflow through each half of a panel independently so that racks on opposite sides of the aisle can receive the right amount of cooling for the load in the rack.



Dual-zone
Opposed Blade
Damper for use with
DirectAire® X2 Panels

Multi-Zone Opposed Blade Damper

Tate's multi-zone opposed blade damper enables the airflow delivery to be balanced based on the specific load in the rack. The damper allows data center operators to individually adjust airflow to three zones within the rack – top, middle and bottom.



Multi-zone Opposed
Blade Damper for
use with DirectAire®,
DirectAire® AI or
DirectPerf 32% Panels

Key Performance Characteristics

- Provides more airflow at 100% open than slide dampers
- Easily adjustable from above without grate removal
- Drop in design allows for easy retrofits, with DirectAire® X2 in a Tate bolted stringer systems

Key Performance Characteristics

- Reduces cooling energy usage
- For use with full or partial loaded racks
- Provides the most granular airflow control available
- Easily adjustable from above without panel removal
- Drop in design allows for easy retrofits under airflow panels
- Field mounted design available for DirectAire AI, DirectPerf 32%, and DirectPerf 25% panels.

Airflow Panels & Controls

PowerAire® Quad

Fan Assisted Airflow Controls

The PowerAire® Quad fan is equipped with 4 fans connected in parallel to provide built-in redundancy. This unit is only 4" deep making it ideal for retrofit situations with finished floor heights as low as 7.5". This unit can cool up to 16 kW of supported IT load per PowerAire® / DirectAire® combination.



Key Performance Characteristics

- Zero maintenance
- Installation can be carried out by IT staff
- Multiple control options available
- User programmable set point
- EC fan technology is variable from 0-100 %
- Available in 100-120 V or 200-240 V power options
- Viewable Peak Temp for walk-through check of racks
- Available Auto Transfer Switch offers A/B power feed
- 24" and 60 cm raised floor compatible

Airflow Panels & Controls

Performance Charts

CFM & kW Capacity

Airflow Panel	0.02" H ₂ O (5 Pa)		0.04" H ₂ O (10 Pa)		0.06" H ₂ O (15 Pa)		0.08" H ₂ O (20 Pa)		0.10" H ₂ O (25 Pa)	
	CFM (L/s)	(kW/Rack)	CFM (L/s)	(kW/Rack)	CFM (L/s)	(kW/Rack)	CFM (L/s)	(kW/Rack)	CFM (L/s)	(kW/Rack)
DirectAire®										
w/o Damper	1151 (543)	8.5	1626 (767)	12.0	2007 (947)	14.8	2318 (1093)	17.1	2594 (1224)	19.1
w/OBD	986 (465)	7.3	1427 (673)	10.5	1789 (844)	13.2	2056 (970)	15.2	2331 (1100)	17.2
w/PA Quad	2012 (950)	14.9	2061 (973)	15.2	2111 (996)	15.6	2158 (1018)	15.9	2199 (1038)	16.2
DirectAire® Al										
w/o Damper	1123 (528)	8.3	1572 (753)	11.6	1913 (906)	14.1	2200 (1062)	16.3	2451 (1167)	18.1
w/OBD	857 (404)	6.3	1293 (610)	9.5	1546 (730)	11.4	1745 (824)	12.9	1951 (921)	14.4
w/PA Quad	2018 (952)	14.9	2110 (996)	15.6	2140 (1010)	15.8	2130 (1005)	15.7	2158 (1019)	15.9
DirectPerf 32%										
w/o Damper	531 (251)	3.7	744 (351)	5.2	890 (420)	6.2	1010 (477)	7.1	1121 (529)	7.8
w/OBD	480 (227)	3.4	693 (327)	4.8	822 (388)	5.7	963 (454)	6.7	1063 (502)	7.4
DirectPerf 25%										
w/o Damper	357 (168)	2.6	496 (234)	3.7	602 (284)	4.4	689 (325)	5.1	765 (361)	5.6
w/Slide damper	260 (123)	1.9	367 (173)	2.7	447 (211)	3.3	515 (243)	3.8	574 (271)	4.2
GrateAire										
w/o Damper	916 (432)	3.6	1320 (623)	5.2	1608 (759)	6.4	1860 (878)	7.4	2096 (989)	8.3
w/OBD	810 (382)	3.2	1121 (529)	4.5	1386 (654)	5.5	1595 (753)	6.3	1785 (842)	7.1
w/Slide damper	504 (238)	2.0	712 (336)	2.8	876 (413)	3.5	1008 (476)	4.0	1128 (532)	4.5
Standard Perf										
w/o Damper	332 (152)	1.3	476 (224)	1.9	584 (275)	2.3	666 (314)	2.6	746 (352)	3.0
w/Slide damper	237 (112)	0.9	328 (155)	1.3	402 (190)	1.6	461 (218)	1.8	515 (243)	2.0

Cooling capacity per rack is based on: CFM x Capture Index % / 126 (CFM needed to cool 1 kW @ 25° ΔT).
Tests Conducted with fans operating at 100% power and dampers 100% open.



04

Containment

Customizable Solutions for Hot and Cold Aisles

Containing an entire row of air can improve capacity and energy efficiency by reducing by-pass airflow. The separation of cold supply air from hot exhaust air is one of the most popular strategies in data center design. Tate's line of containment products provides the optimum aisle containment solution. Easy to install and modify, our products offer valuable energy savings opportunities.

Optimize your data center facility today by installing Tate containment products.



Containment

Single and Dual Sliding Doors

Tate sliding doors are an ideal solution for both cold and hot aisle containment.

Combining cost-effectiveness with ease of installation, the no threshold design eliminates tripping hazards. Frame components are pre-assembled and connect to the header rail to secure the assembly together. Integrated slide-locks simplify door installation onto the frame.

Single Sliding Door



Key Performance Characteristics

- Full perimeter compression gaskets efficiently seal and minimize air leakage
- No threshold design prevents tripping
- Sturdy aluminum framing
- Multiwall panel option adheres to new NFPA codes and are UL Listed for use in aisle containment
- Ergonomically designed with angled handles to reduce pinch points
- Arrives at job site fully assembled

Dual Sliding Doors



Containment

Single and Dual Hinged Doors

Tate hinged doors are a leading solution for aisle ends of hot and cold aisle containment configurations.

The pre-assembled aluminum design with mitered hinges and factory installed handles allows for quick and easy installation. The doors can be custom built to suit your particular data center requirements and viewing panels are designed with clear or multiwall polycarbonate.

Single Hinged Door



Key Performance Characteristics

- Full perimeter compression gaskets where applicable efficiently seal and minimize air leakage
- Single doors can be right or left hinged option for easy maintenance and installation
- No threshold design prevents tripping
- Sturdy aluminum framing
- Multiwall panel option adheres to new NFPA codes and are UL Listed for use in aisle containment
- Arrives at job site fully assembled

Dual Hinged Doors



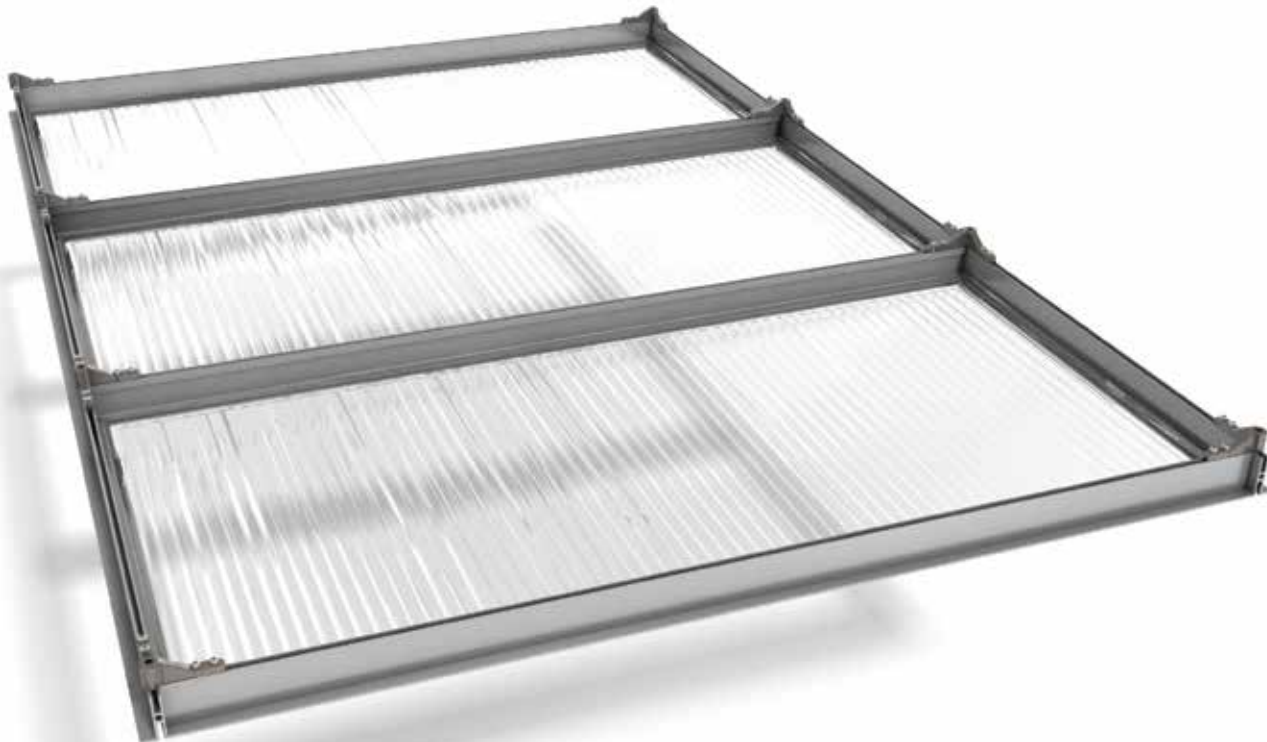
Containment Hard Roof

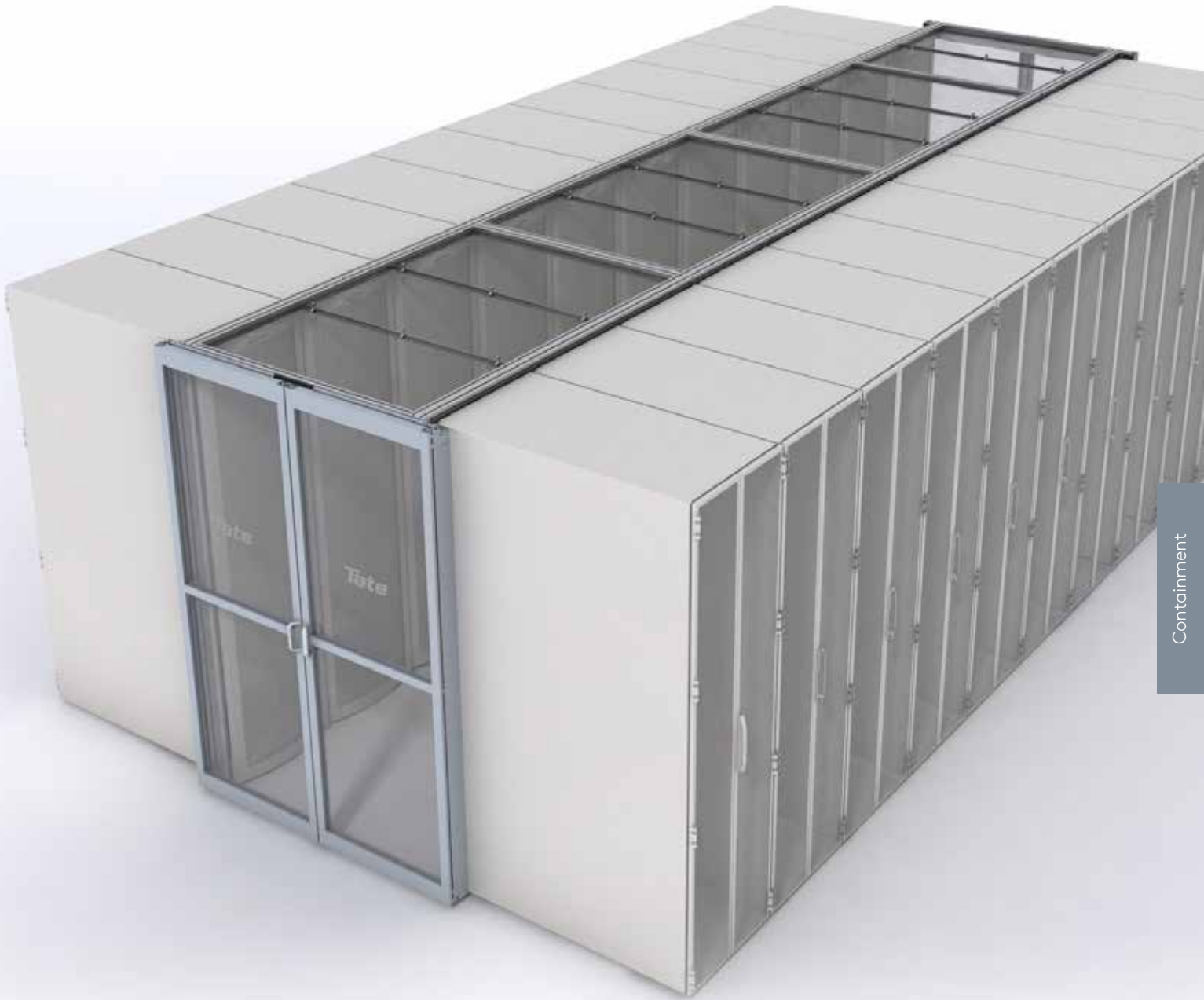
Tate's unique hard panel roof fully segregates hot and cold air, improving the cooling capacity of any data center.

It attaches to the top of the rack and lies flat to avoid interference with other overhead obstructions and extrusions. Should a fire occur, the roof panels drop away to allow overhead suppression systems to work within the aisle. Available with white, black or silver painted aluminum tracks Tate's hard roof has been engineered to provide long lasting results.

Key Performance Characteristics

- Drop away tiles allow for use under water sprinkler system when permitted by code
- Various aisle widths available
- Thin profile to prevent overhead obstructions
- Color matching options available
- Designed for hanging or rack supported installations



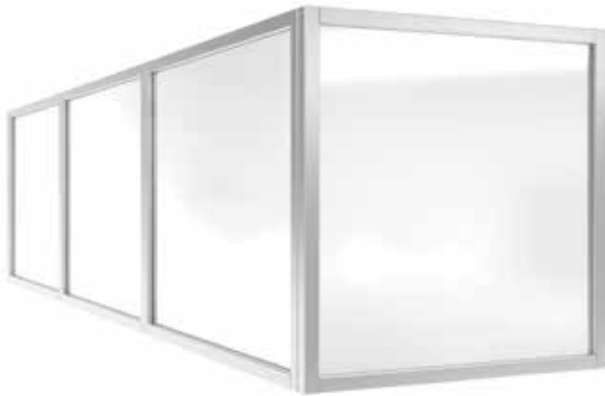


Containment

Containment Partitions

Hard Partition

Tate hard partitions are designed to be used in either hot or cold aisles. Constructed of aluminum, with several finish options, the partitions can be customized to seal numerous gap sizes and areas. Hard partitions are custom fabricated for every job to ensure air leakage is minimized. Lightweight, cost effective and attractive looking, they come pre-assembled with supplied brackets for quick and easy installation.

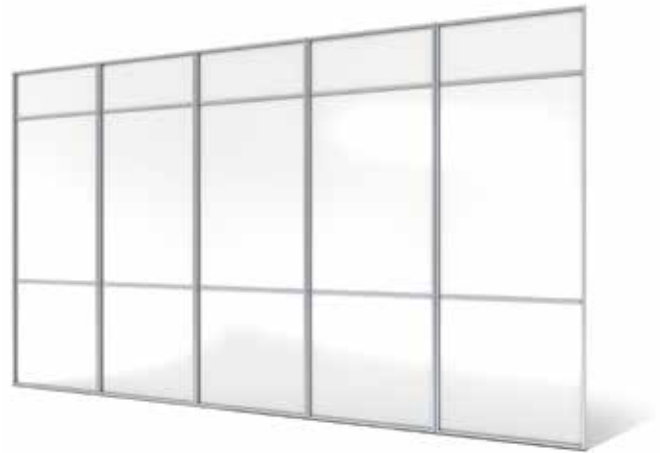


Key Performance Characteristics

- Pre-assembled for easy installation
- Modular design (all parts screw together)
- Transparent or semi-transparent panel
- Multiple infills and color options available
- Compression gaskets efficiently seal and minimize air leakage
- Multiwall panels adhere to 2013 NFPA 75 and are UL Listed for use in aisle containment

Wall Partition

Tate Wall Partitions are ideal for dividing spaces to meet colocation, departmental, privacy or other requirements. Constructed of painted aluminum frames the partitions can be customized to a wide range of dimensions. There are four panel types available including clear polycarbonate, multi-wall polycarbonate, white AMC (Aluminum Composite Material) and expanded aluminum to meet any privacy and security needs. The wall partition system includes all of the components and brackets required to assemble and install.

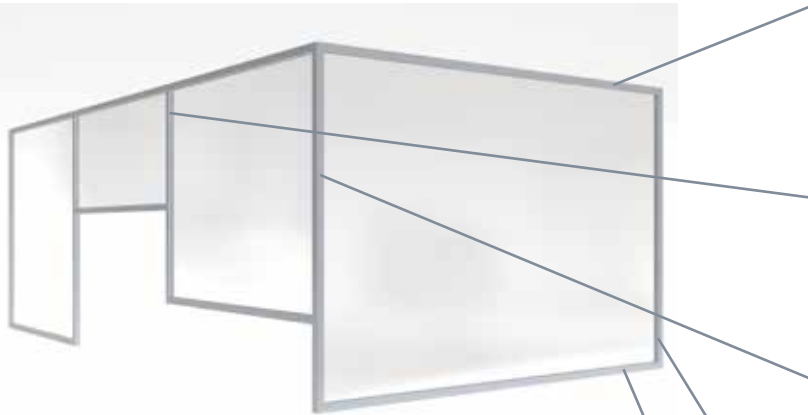


Key Performance Characteristics

- Pre-assembled to allow for quick subdivision of data center spaces
- Variable height and width as required for each particular space
- Adheres to new NFPA 75 code
- Multiwall panels are UL Listed for use in aisle containment
- Thru hole bolting for connecting panels to each other
- Sturdy 3.2" x 1.5" aluminum framing
- Meant for attachment to structural grid overhead and floor below
- Transparent, semi-transparent or solid panel

Flexible Partition

Tate Field Flexible Partitions are an exciting alternative to traditional soft partitions making them ideal for use in any containment application. The system features 5 aluminum extrusion profiles and that are used with multiwall polycarbonate to create custom hard partition in the field. The unique extrusion design holds the multi-wall panel in place without the need for screws or other fasteners. The partitions can attach to a drop ceiling over head or be mounted to the top of the cabinets using angle brackets.



Key Performance Characteristics

- Cost effective site built partitions
- Professional high quality appearance with a high level of site customization
- Extrusions designed for press fit onto Tate supplied 8 mm multiwall panels
- Easily hung from structural grid overhead or fully rack supported as required
- Multiwall panels adhere to 2013 NFPA 75 and are UL Listed for use in aisle containment



Capital F-Channel
Ideal for ceiling hanging of partitions or mounting to other surfaces.



Capital H-Channel
Ties Multiwall panels to each other vertically or horizontally.



Corner Channel
Used to make 90° corners.



Capital U-Channel
Attaches to any side of the Multiwall panel to stiffen and terminate.



Brush Insert Channel
Attaches to the bottom of Multiwall panels to accept brushes. Brush lengths from 1/2" to 6" available

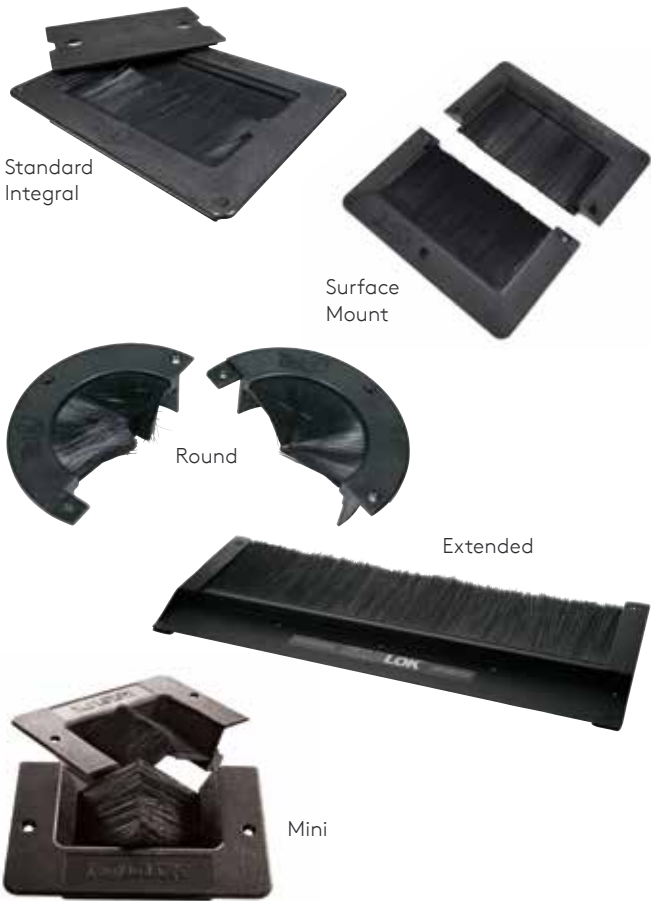
Containment Accessories

Air Sealing Grommets

By-pass air, which is any air delivered into the data center that is not consumed by the equipment and exhausted as waste heat, can have a significant impact on the cooling capacity of a data center.

Tate's air sealing grommets are designed to improve the energy efficiency and air sealing performance of your data center by preventing leakage from the raised floor plenum when penetrations are required for power and data cables above the floor.

Tate has identified a standard cut-out location that works with any rack to ensure that the cutout is always in the proper location inside the back door. Tate's unique standardization option means that the time and mess associated with field cutting is eliminated.



Standard Integral

A heavy duty grommet with a removable lid. The grommet uses a double layer gasket system made of a flexible rubber membrane below a brush to deliver airtight seals around cables.

Surface Mount

Provides a quick and easy way to seal existing cable cutouts without the need to disconnect cables. Installs using adhesive tape on the underside of the grommet and screws.

Round

The Split feature of the Round 4" allows product installation or removal without disturbing cables. Designed to seal openings in new and existing raised floor cutouts to block bypass airflow and maximize cooling system efficiency.

Extended

Designed to seal a variety of existing larger openings, with the added flexibility of modification for unique openings. Can be modified to seal unique cable openings and areas such as gaps around CRAC & CRAH units.

Mini

Designed to seal small cable openings in the raised floor of new or existing computer rooms. The 5" x 2.5" opening offers flexibility for data centers that have multiple cable opening sizes.

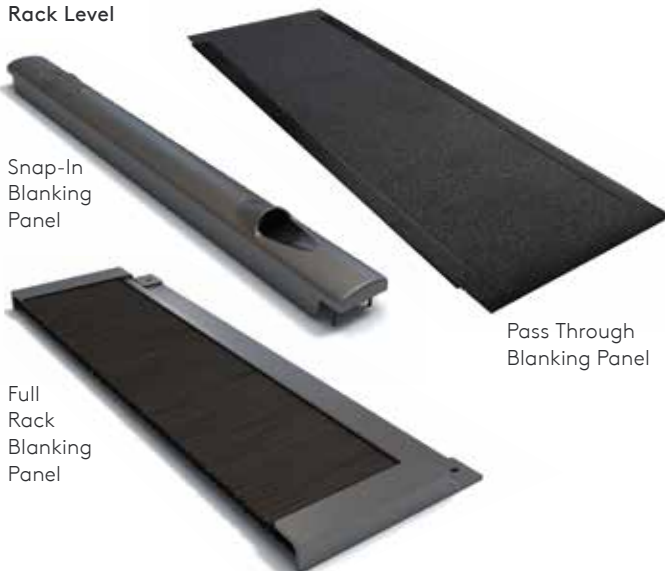
Grommet Name	Area	Imperial (Inches)	Metric (mm)
Standard Integral	Usable cable area	7.25 x 4.75	184 x 120
Surface Mount		6.5 x 6.5	165 x 165
Round		4 Dia.	102 Dia.
Extended		22 x 2.5	559 x 64
Mini		5 x 2.5	127 x 64

Rack & Aisle Level Management

Aisle level airflow management products are engineered to seal a variety of openings in the aisle, blocking bypass airflow and maximizing cooling performance. Controlling errant airflow in the aisle increases efficiency, capacity and reliability.

Tate's rack level airflow management products reduce high intake air temperatures by preventing hot exhaust air from circulating to the front of the IT cabinets.

Rack Level



Snap-In
Blanking
Panel

Full
Rack
Blanking
Panel

Pass Through
Blanking Panel

Aisle Level



Under Rack Panel



Ceiling
Return
Grille

Snap-In Blanking Panels

Blanking panels eliminate the migration of hot and cold air through unoccupied areas of an IT equipment rack. Ergonomically designed for simple tool free installation. Also available with quick view temperature strips that display a temperature range from 50 – 102°F (10 – 38.8°C).

Full Rack Blanking Panels

Designed to seal up to 42U of opening in the server rack, the Full Rack Blanking Panel Kit greatly reduces bypass airflow by eliminating the gaps in the server rack and creating a contained server rack environment.

Pass Through Blanking Panels

This innovative aluminum and Hybrid Brush Technology panel cost effectively controls airflow. Designed to provide an effective airflow sealing solution when used in conjunction with pullout switches or servers that may be occasionally extracted.

Under Rack Panels

Designed to seal large and unique openings found under various sized racks and cabinets, the Under Rack Panel allows easy modifications for new and retrofit applications.

Ceiling Return Grille

Tate's high volume ceiling return grille directs large volumes of hot exhaust air into the drop ceiling plenum enabling the hot air to exit freely minimizing mixing with the cooling airflow.

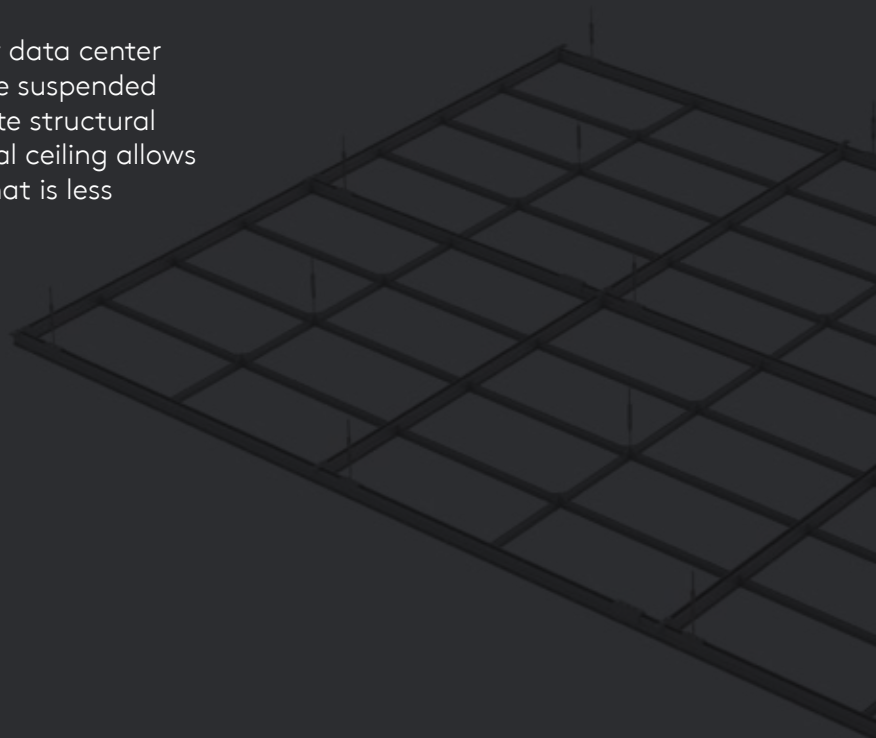


05

Structural Ceiling

An Innovative Approach to Structural Support Systems

Structural ceilings are the ideal solution for any data center application where large heavy items need to be suspended within a building. Replacing custom-built on-site structural systems, such as Unistrut, with a Tate structural ceiling allows you to design and specify a support solution that is less expensive and faster to install.



Structural Ceiling Tate Grid

Aluminum Ceiling Grid System with Continuous Threaded Slot for Maximum Flexibility

Tate's Structural Ceiling Grid is the ideal solution for any application where large heavy items need to be suspended within a building.

Replacing custom-built on-site structural support systems such as strut, with Tate's Structural Ceiling Grid can offer many advantages. A structural ceiling allows you to pre-design and specify the support solution in advance and, best of all it's less expensive and faster to install.

Key Performance Characteristics

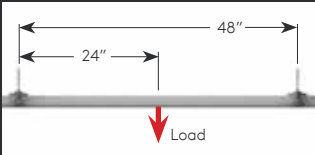
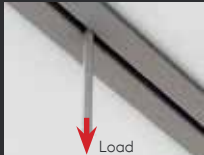

- Faster and easier to install than other grid systems
- Multiple grid patterns and configurations are available
- Eliminates the need for multiple trades on-site
- Experienced data center product manufacturer and contracting teams

Main Runner & Structural Tee Specifications

- Pre-engineered and factory produced aluminum structural ceiling grid with continuously threaded slot
- Main Runners with notches for precise location and connection of coped Structural Tees using simple four screw connectors
- Grid member center-to-center spacing can be customized to accommodate project-specific specifications
- Available in White, Black or Silver painted finish

Performance Criteria

The bottom side of the structural grid is available with a 3/8"-16, 1/4"-20 or M10-1.5mm continuous threaded slot for mounting items directly to the grid. Refer to the table below for load performance details on the grid and connections.

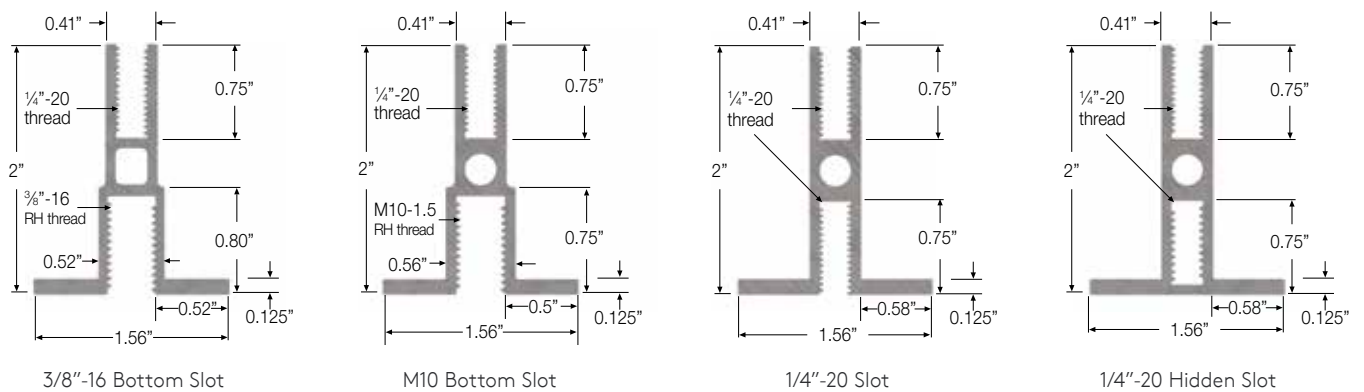
  			
Hanging Method	Grid Load Performance (with building connections 4'x4' on centers)	Connection to Bottom Slot (1/4"-20, 3/8"-16 or M10-1.5mm)	Connector in line with building connection
Point Load (lbs)	380 lbs* (1.7 kN)	380 lbs* (1.7 kN)	800 lbs (3.6 kN)
Uniform Load (lbs/ft²)	50 lbs/ft² (2.4 kN/m²)	-	-
Ultimate Point Load (lbs)	700 lbs (3.1 kN)	760 lbs (3.4 kN)	1600 lbs (7.1 kN)

*Max point load no less than 4" (120 cm) apart in any direction.

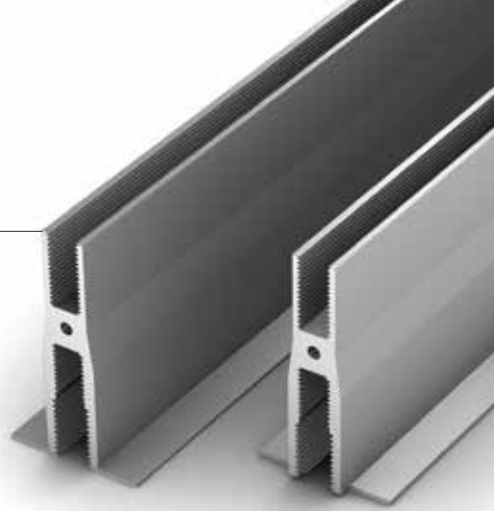




Tate Grid Structural Ceiling Extrusion Range



Structural Ceiling Tate Duo



Tate Duo Structural Ceiling system offers a more robust aluminum extrusion for spanning larger distances between connections to the building structure. Spans up to 8' are possible allowing for more flexibility and few connection points to the building structure.

Tate Duo also features a two-layer continuously threaded slot on the underside of the extrusion so that multiple threaded rod diameters may be used for hanging different equipment within a building.

Replacing custom-built on-site structural support systems such as strut, with Tate Duo offers the most flexible solution for future configuration changes of any pre-designed ceiling solution.

Key Performance Characteristics

- Pre-engineered and factory produced aluminum structural ceiling grid with continuously threaded slots ($\frac{3}{8}$ "-16 and $\frac{1}{2}$ "-13)
- Grid consists of Main Runners with notches for precise location and connection of coped Structural Tees using simple four screw connectors
- Load performance based on building connection spacing of 4ft. on center:
 - Max grid point load at midspan of 1,100lbs.
 - Max grid uniform load of 220 lbs/ft²
 - Safety factor of 2 for all connections
- System Weight: 2'x2' Grid: 1.1 lb/ft² / 2'x4' Grid: 0.9 lb/ft²
- Grid member center-to-center spacing can be customized to accommodate project specific specs



Connector Types



Duo Cross Connector



Duo Hanging Connector



Duo L Connector



Duo Outer Splice



Duo High Load Washer



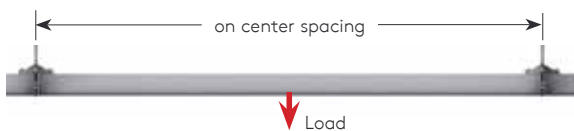
Duo Tee Connector

Connector Specifications

- High strength stamped steel construction
- Ribs on connector to engage with grid and prevent racking
- Attaches to grid members with (4) $\frac{3}{8}$ "-16 screws
- $\frac{1}{2}$ "-13 turnbuckles with starter rod threads into connectors on a 4'-8' spacing
- Tee and Corner connectors for perimeter installation

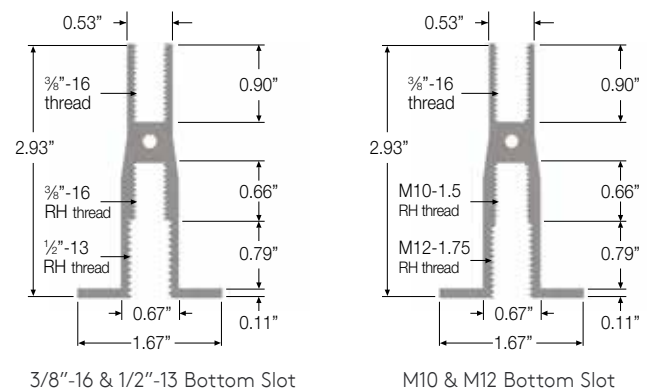


Structural Tee Deflection (Midspan Beam)



On center spacings	Uniform load lbs/ft ²	Max. allowable deflection	Max point load lbs
4'	225	0.40"	800
5'	144	0.40"	500
6'	100	0.40"	400
7'	73	0.40"	250
8'	56	0.40"	150

Tate DUO Structural Ceiling Extrusion Range

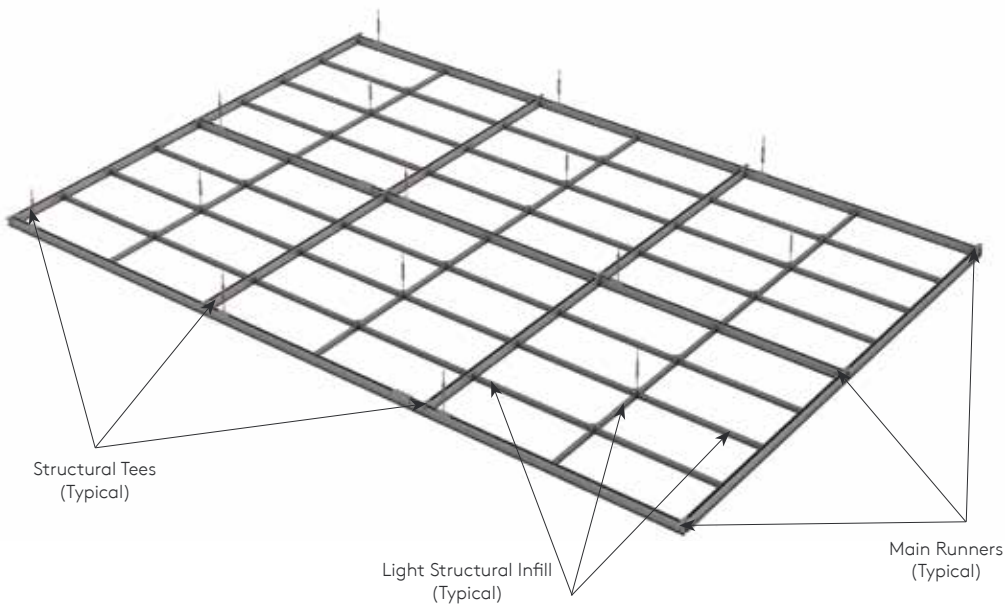

Tate®

Structural Ceiling Tate Strut

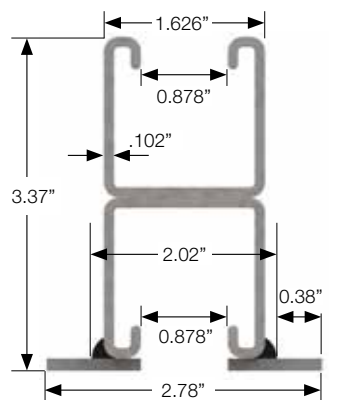
Steel Structural Ceiling Grid System

Tate Strut is a strong, galvanized steel profile with a white painted finish. Uniquely integrated welded flanges support tiles, light fixtures, and return air grilles – removing the need for two separate ceiling systems.

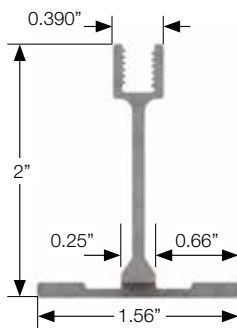
The continuous open channel slot allows for full flexibility when suspending cable trays, bus bars, and other heavy accessories from the structural ceiling. Both strut main runners and structural tees are pre-drilled for infill connections based upon application specifications.



Tate Strut Ceiling Grid Profiles



Tate Strut Structural Mains & Tees



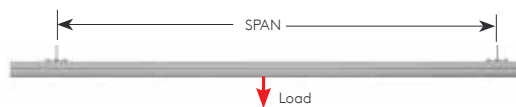
Light Structural Infill

Key Performance Characteristics

- 12 gauge steel construction
- Hot dipped galvanized pretreatment with a white powder coat finish
- Continuous open top slot to accommodate connection to building structure
- Continuous open bottom slot to accommodate connections of cable trays, bus bars, and other heavy accessories
- Welded flange to accommodate ceiling tiles, lights and return grilles
- Strut profile is pre-drilled for installation of light structural infill used to maintain grid for installing ceiling tiles



Performance Criteria



SPAN (in)	Max Point Load @ Yield Point ¹ (lbs)	Max Deflection @ Yield Point (in)	Max Point Load @ Various Deflections (lbs)			Max Uniform Load (lbs/LF)	Max Uniform Load (lbs/SF)
			SPAN /180	SPAN/240	SPAN/360		
48	1750 ²	0.17	1750	1750	1369	219	109
60	1750 ²	0.33	1750	1315	876	175	70
72	1667	0.55	1217	913	609	139	46
84	1429	0.75	894	671	447	102	29
96	1250	0.97	685	514	342	78	20
108	1111	1.23	541	406	271	62	14
120	1000	1.52	438	329	219	50	10

1. Maximum point load locations are to be no less than the length of the strut span in any given direction

2. Maximum point loads are limited by the turnbuckle connections to strut. Turnbuckles are required to be within 12" of a Main Runner Splice

Structural Ceiling Accessories

Metal Ceiling Panels

Easy to install, Tate's pre-painted metal ceiling panels offer a high performance finish. Ideal for Data Centers, Clean Rooms, and Horticultural Environments where security, cleaning and anti-corrosion requirements exist. Available in both steel and aluminum options the panels can be custom stamped to meet any grid size configuration or requirement.



Key Performance Characteristics

- Available in pre-painted steel or aluminum
- Optional accessories include hold down clips and field applied gaskets
- Custom manufactured to any grid configuration

Tate LED

Designed for seamless integration into the Tate Grid ceiling system using snap-in spring clips for easy installation from below, an ideal solution for data center lighting.

Junction box included for low voltage wiring connections to a remote power supply (installed separately). Max distance from power supply to fixtures is 30 feet using 18 AWG wire. Longer distance achievable if using higher gauge wire.



Key Performance Characteristics

- Snap-in spring clips designed for Tate Grid ceiling system
- Painted aluminum extruded body with white PC end caps
- High transmitting acrylic PMMA lens
- High output LEDs consume 16 W total (2 foot) or 32 W total (4 foot)
- Input voltage 24 VDC. Remote power supply includes JB compartment for AC input (120-277V) direct wiring with metal conduit
- 5 year warranty



Structural Ceiling

Corporate Headquarters:

7510 Montevideo Road,
Jessup, MD 20794
Tate Hotline: 1-800-231-7788
Tel: +1 410 799 4200
Fax: +1 410 799 4207

Production Facilities:

7510 Montevideo Road,
Jessup, MD 20794

52 Springvale Road, Red Lion,
PA 17356
Tel: +1 717 244 4071
Fax: +1 717 246 3437

Canadian Sales & Support Office:

880 Equestrian Court, Oakville,
ON L6L 6L7 Canada
Tate Hotline: 1-800-231-7788
Tel: +1 905 847 0138
Fax: +1 905 847 0141

Central and South American Sales & Support:

Tel: +1 954 412 2334

Asia Sales & Support Office:

1 Commonwealth
#07-26 One Commonwealth,
SINGAPORE 149544
Tel: +65 6264 5942

Australian Sales & Support Office:

3 Herbert Place, Smithfield NSW 2164,
Sydney Australia
Tel: +61 2 9612 2300
Fax: +61 2 9612 2301

European Sales & Support:

B16 Ballymount Corporate Park,
Ballymount Avenue,
Ballymount, Dublin 16, Ireland
Tel: +353 (1) 685 6518

Middle East Sales & Support:

Jebel Ali-Lahbab Road (E 77 Road),
Dubai Investment Park,
United Arab Emirates
Tel: +971 56 199 8368

A Kingspan Group
Company



Tate components
are proudly made
in the U.S.A.

For the product offering in other markets please
contact your local sales representative or visit
www.tateinc.com

Care has been taken to ensure that the contents of this publication
are accurate, but Kingspan Limited and its subsidiary companies do
not accept responsibility for errors or for information that is found
to be misleading. Suggestions for, or description of, the end use or
application of products or methods of working are for information
only and Kingspan Limited and its subsidiaries accept no liability in
respect thereof.