

### GRID SPECIFICATIONS

- Pre-engineered and factory produced aluminium structural ceiling grid with continuously threaded slot
- Grid consists of Main Runners with notches for precise location and connection of coped Structural Tees using four screw connectors
- Capable of supporting power modules, light fixtures, cable trays, partitions, and other accessories
- Load performance based on building connection spacing of 1200mm on center
  - Max grid point load at midspan of 1.7 kN
  - Max grid uniform load of 2.4 kN/m<sup>2</sup>
  - Safety factor of 2 for all connections
- System Mass
  - 600mm x 600mm Grid: 40 N/m<sup>2</sup>
  - 600mm x 1200mm Grid: 30 N/m<sup>2</sup>
- Grid member center to center spacing can be selected to accommodate project specific specs. (see page 3 for more information)
- All bolt connections to the top slot or bottom of the grid should be tightened flush to a washer with a maximum torque value of 4Nm

### CONNECTOR SPECIFICATIONS

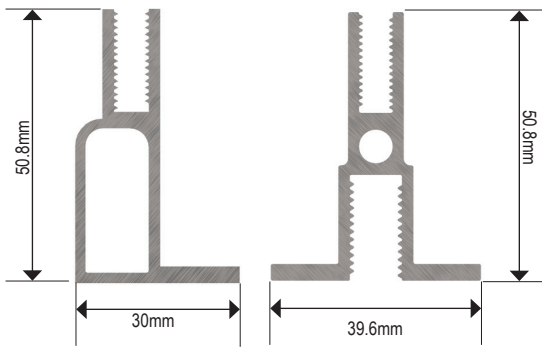
- Steel Construction
- Corrosion Resistant Powder Coating
- Ribs on connector to engage with grid and prevent racking
- Attaches to grid members with (4) ¼"-20 screws
- M10-1.5 Turnbuckles with starter rod threads into connectors on a 1200x1200mm spacing
- On site modifi able connectors for perimeter installation

### COMPONENTS

- 3600mm Main Runner / 3600mm Perimeter Angle
- 600mm Structural Tee / 1200mm Structural Tee
- Field Connector / XL Connector
- Perimeter Connector
- ¼"-20 x 1-½" Screws w/ ¼" Lock washer
- M10-1.5 x 178mm Turnbuckle Assembly with Starter Rod
- Ceiling Hold Down Clips (optional)
- Ceiling Tiles (optional from Tate)
- Threaded Rod Connection to Building (Hot Dipped Galvanised)

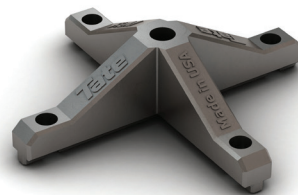
### GRID OPTIONS

- Grid Color  White Paint
- Other colours by request
- Grid Spacing – On center (see page 3 for detail)
- 600 x 600mm
- 600 x 1200mm

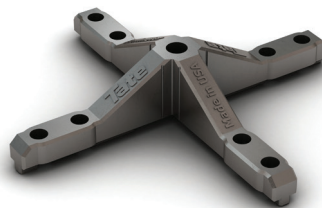


Perimeter Extrusion

Mains and Structural Tees



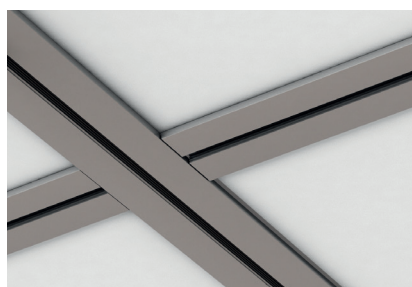
Field Connector



Perimeter & XL Connector



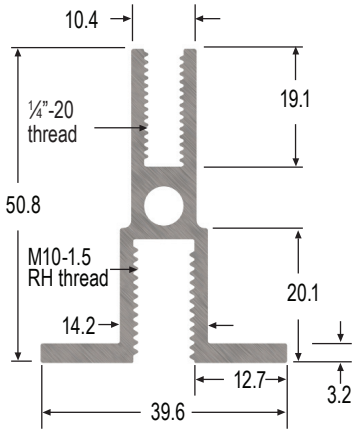
Simple supported 4 screw assembly and vertically supported flanged grid



Pre-threaded connections for cable trays, utilities and other accessories

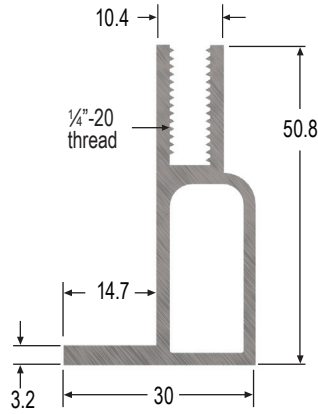
### PROFILE OPTIONS

#### M10 Bottom Slot\*



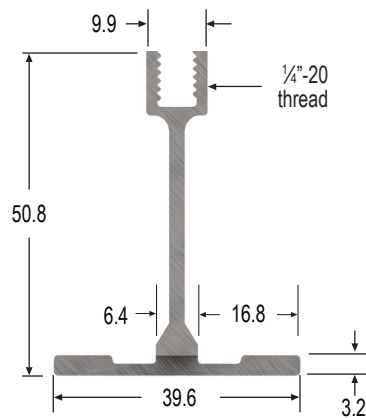
- Continuous threaded 1/4"-20 top slot
- Continuous threaded M10-1.5 bottom slot
- Utilizes standard hardware connectors and features of Tate Grid

#### Fixed Perimeter\*



- Continuous threaded 1/4"-20 top slot
- Intended for fixed perimeter installation areas (See page 6)
- Utilizes all standard hardware connectors and features of Tate Grid

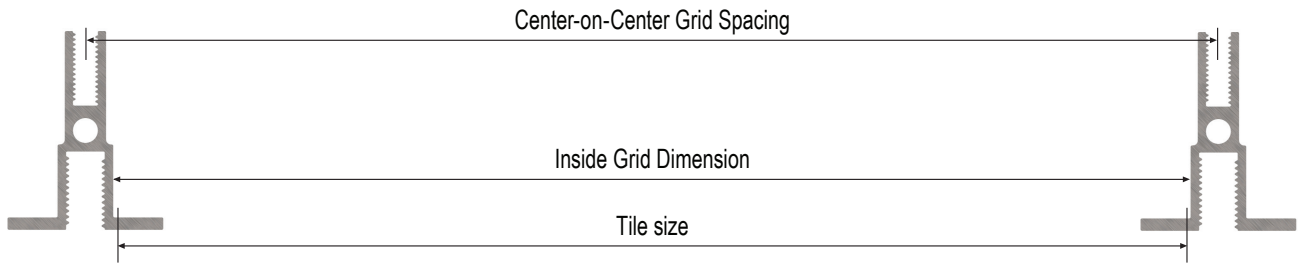
#### Light Structural Extrusion\*



- Continuous threaded 1/4"-20 top slot
- Utilizes standard hardware connectors and features of Tate Grid
- For infill applications where complete mounting flexibility across the ceiling is not required

\*Note: All Dimensions are in Millimeters

### GRID SPACING AND TILE SIZING



If you want the Grid Spacing to be on a 600 x 600mm or 600 x 1200mm module size, use this table to determine tile size requirement:

Grid Profile	Grid Spacing (L x W)	Tile Size (L x W)	Hanger Spacing
M10-1.5 Bottom Slot	600 x 600mm	580 x 580mm +/- 3mm	1200mm x 1200mm
	600 x 1200mm	580 x 1180mm +/- 3mm (see example below)	1200mm x 1200mm

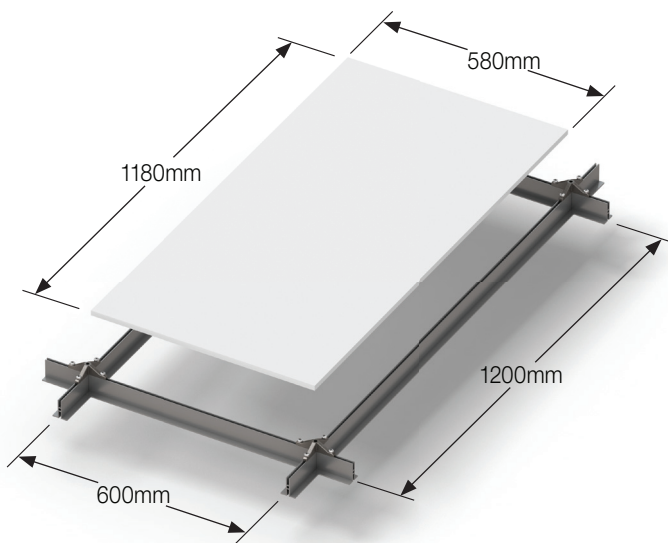
Note: Maximum Tile Size = Inside Grid Dimension minus 3.2mm. Minimum Tile Size is based on a minimum overlap on the extrusion flange of 3.2mm when the tile is shifted all the way to one side.

If you want the Grid Spacing to be on a larger module size to fit standard 600 x 600mm or 600 x 1200mm nominal tile sizes, use this table:

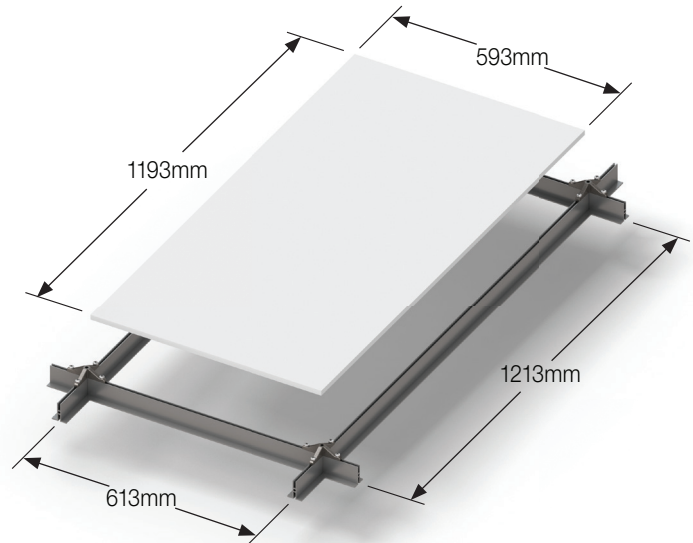
Grid Profile	Grid Spacing (L x W)	Tile Size (L x W)	Hanger Spacing
M10-1.5 Bottom Slot	613 x 613mm	593 x 593mm +/- 4mm	1225mm x 1225mm
	613 x 1213mm	593 x 1193mm +/- 4mm (see example below)	1225mm x 1213mm

Note: Maximum Tile Size = Inside Grid Dimension minus 3.2mm. Minimum Tile Size is based on a minimum overlap on the extrusion flange of 3.2mm when the tile is shifted all the way to one side.

**Sizing Based on  
600 x 1200mm Grid Spacing**

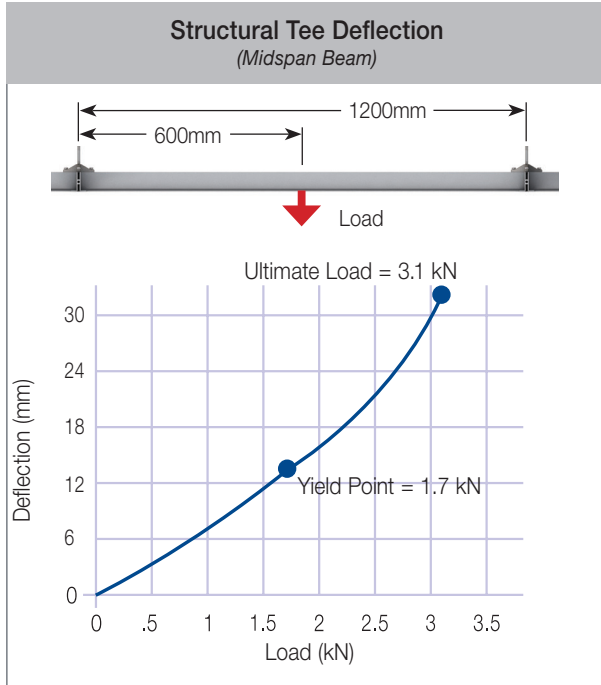


**Sizing Based on 600 x 1200mm  
Nominal Tile Size**



### PERFORMANCE CRITERIA

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



Calculate midspan beam deflection at any point below yield

$$S = \frac{Wl^3}{48EI}$$

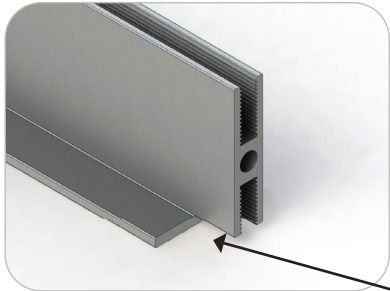
$S =$  Deflection  
 $W =$  load  
 $l = 1200\text{mm}$   
 $E = 68.9 \text{ kN/mm}^2$   
 $I = 63700\text{mm}^4$

On Center Hanger Spacing	Max. safe working uniform Load	Max. Allowable Deflection	Max. Safe Working Load	Ultimate Point load
1200mm x 1200mm	2.4 kN/m <sup>2</sup>	13.5mm	1.7 kN*	3.1 kN

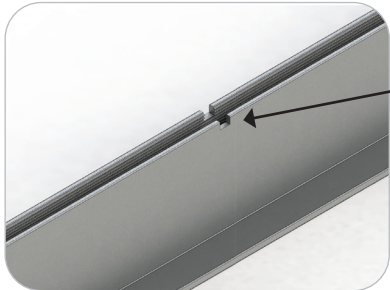
\*Max point load no less than 1200mm apart in any direction.



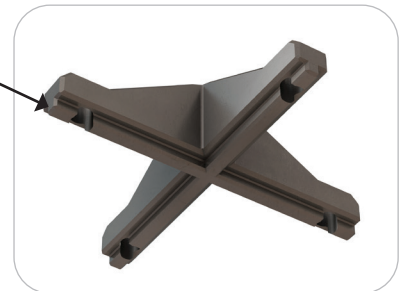
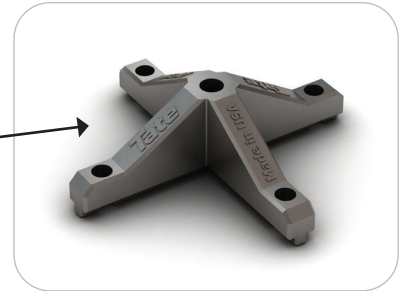
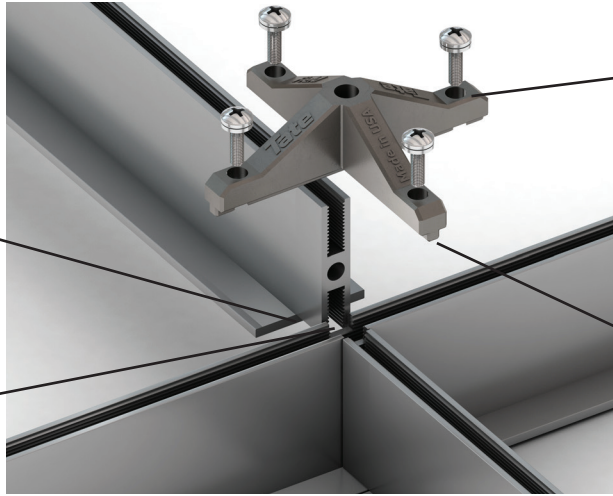
## FIELD CONNECTOR ASSEMBLY



Structural Tee coped for simplified installation and stronger connections

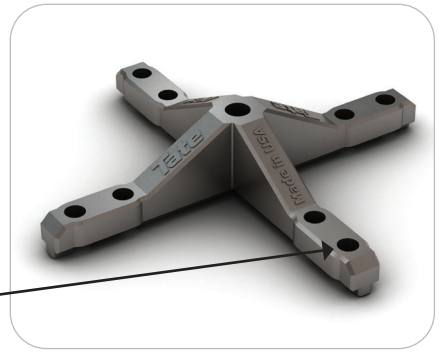
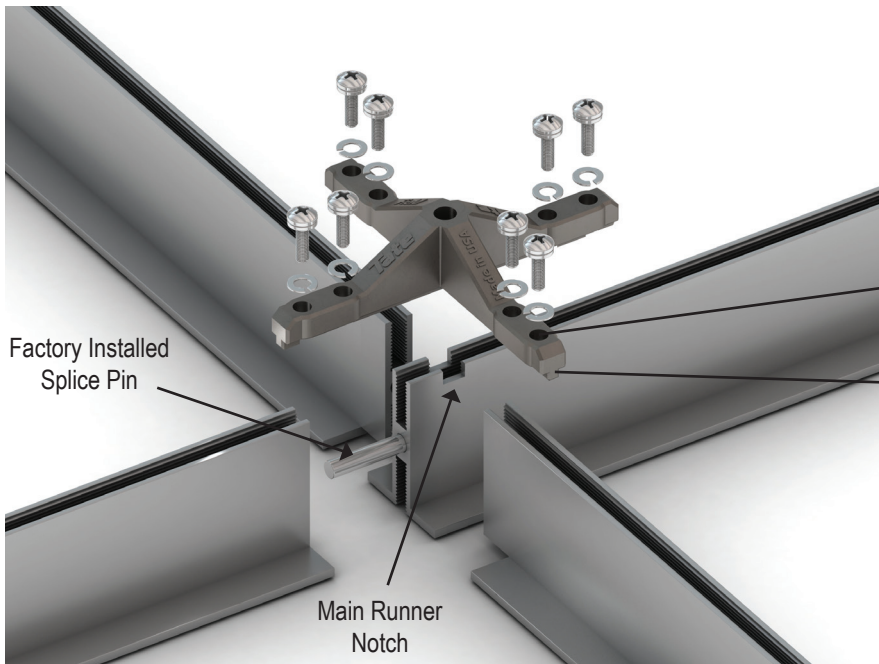


Main Runners notched to positively position connectors on center every time



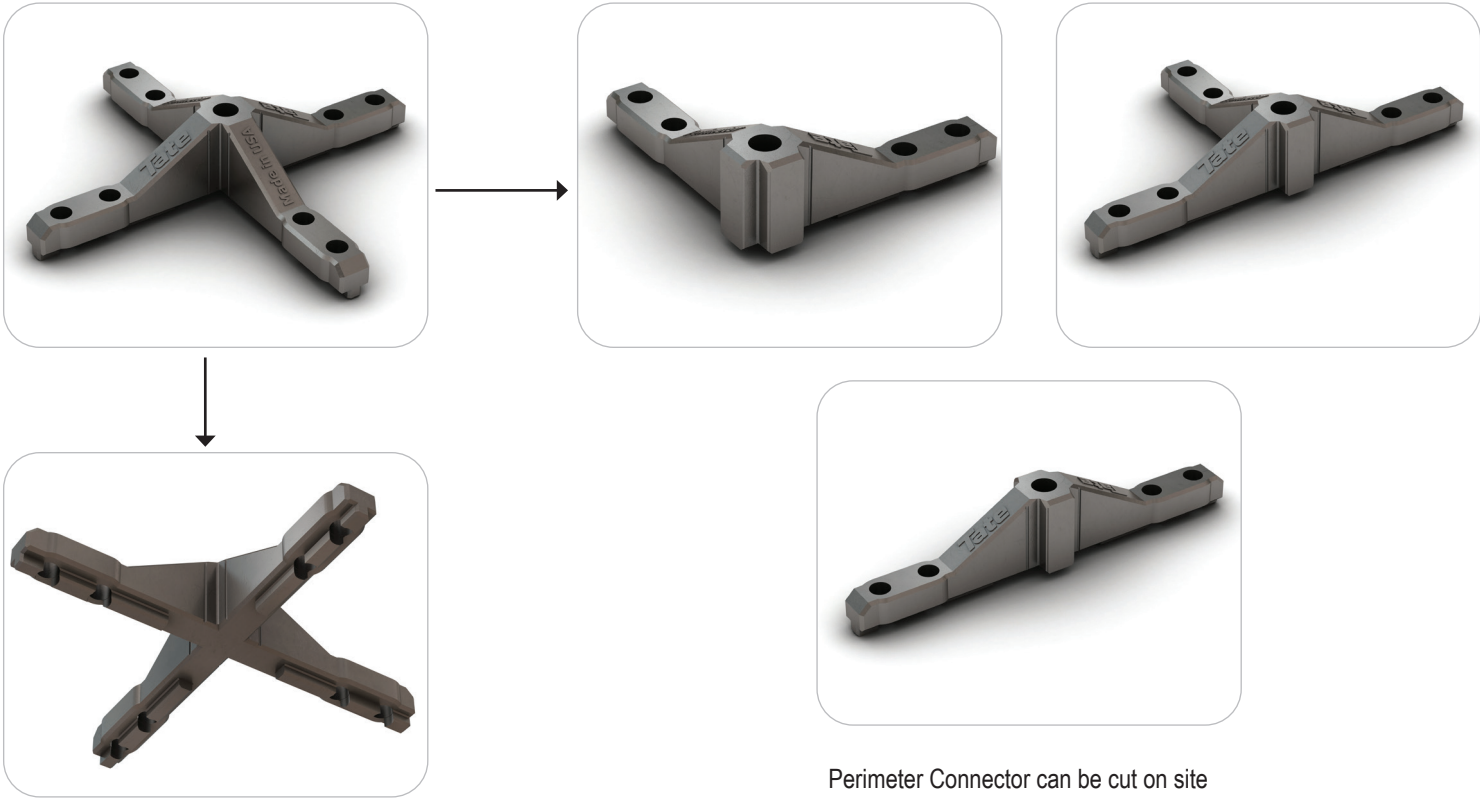
Ribs on connector to align with grid and prevent racking

## XL CONNECTOR



XL Connector is designed for additional support at the ends of each Main Runner.

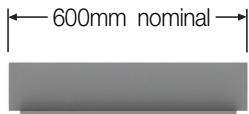
## PERIMETER CONNECTOR



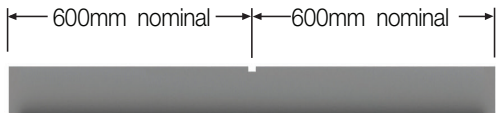
Bottom of Perimeter Connector is designed with ribs that locate the connector on Perimeter Extrusion.

Perimeter Connector can be cut on site to be used in various locations to connect grid together.

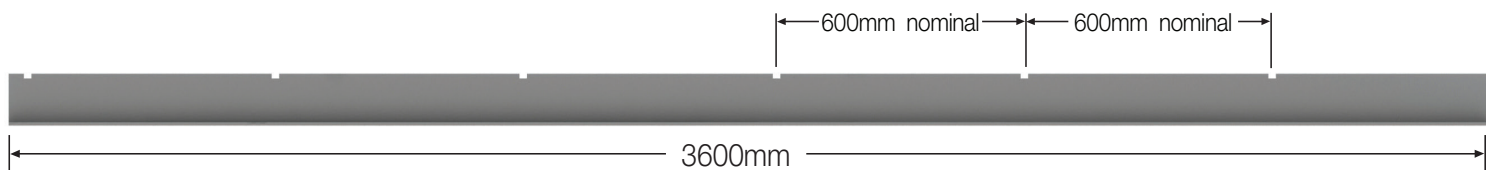
## MAIN RUNNERS AND STRUCTURAL TEES



All 600mm and 1200mm Structural Tees have coped ends which allows the grid to rest on the longer sections for stronger connections and simplified installation.

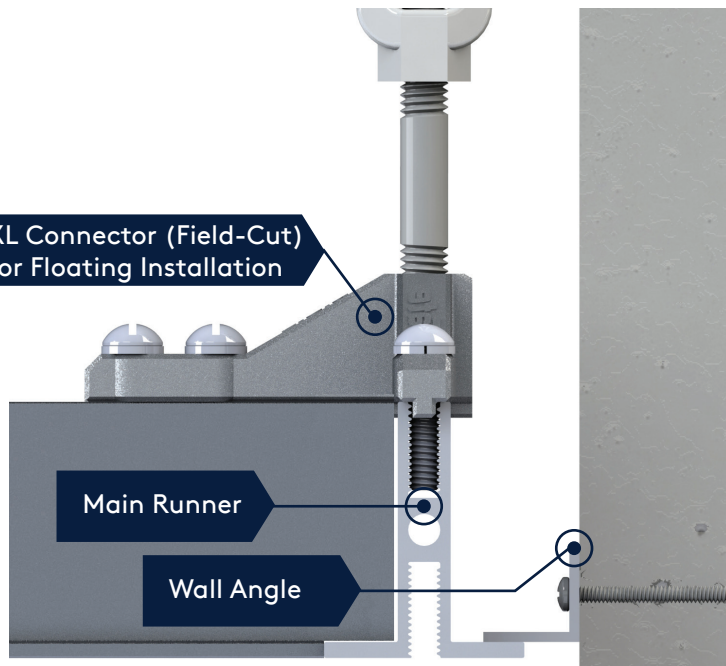


All 1200mm Structural Tees and Main Runners are notched every 600mm on center for proper alignment and spacing of the connectors.



*Note: Structural Tee and Main Runner dimensions are nominal and are adjusted for custom-sized ceiling grid designs*

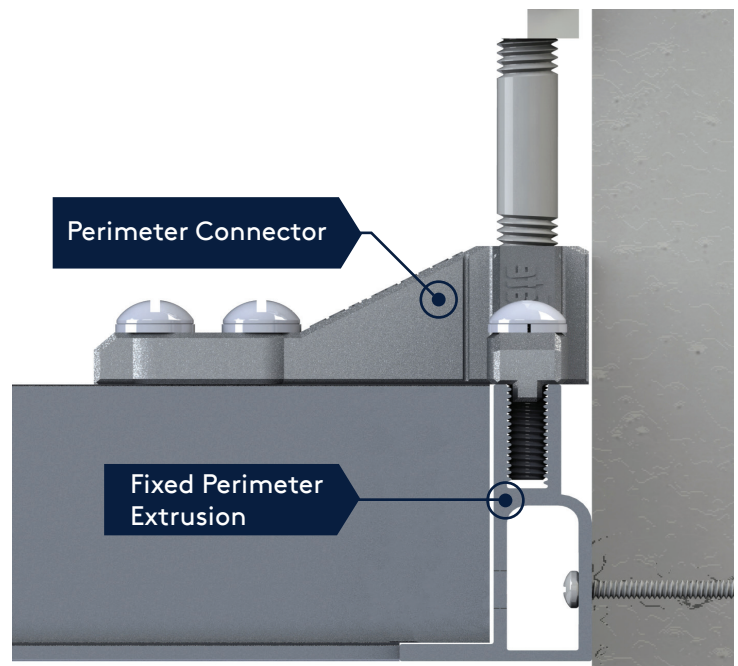
## PERIMETER DETAILS



**Floating Installation Detail**

Main Runners are utilized when installing with a floating detail. When installing with a floating perimeter, XL Connectors can be utilized to take advantage of the notches and ribs that align extrusions and prevent racking.

Additionally it is recommended to utilize a Wall Angle attached to the perimeter.



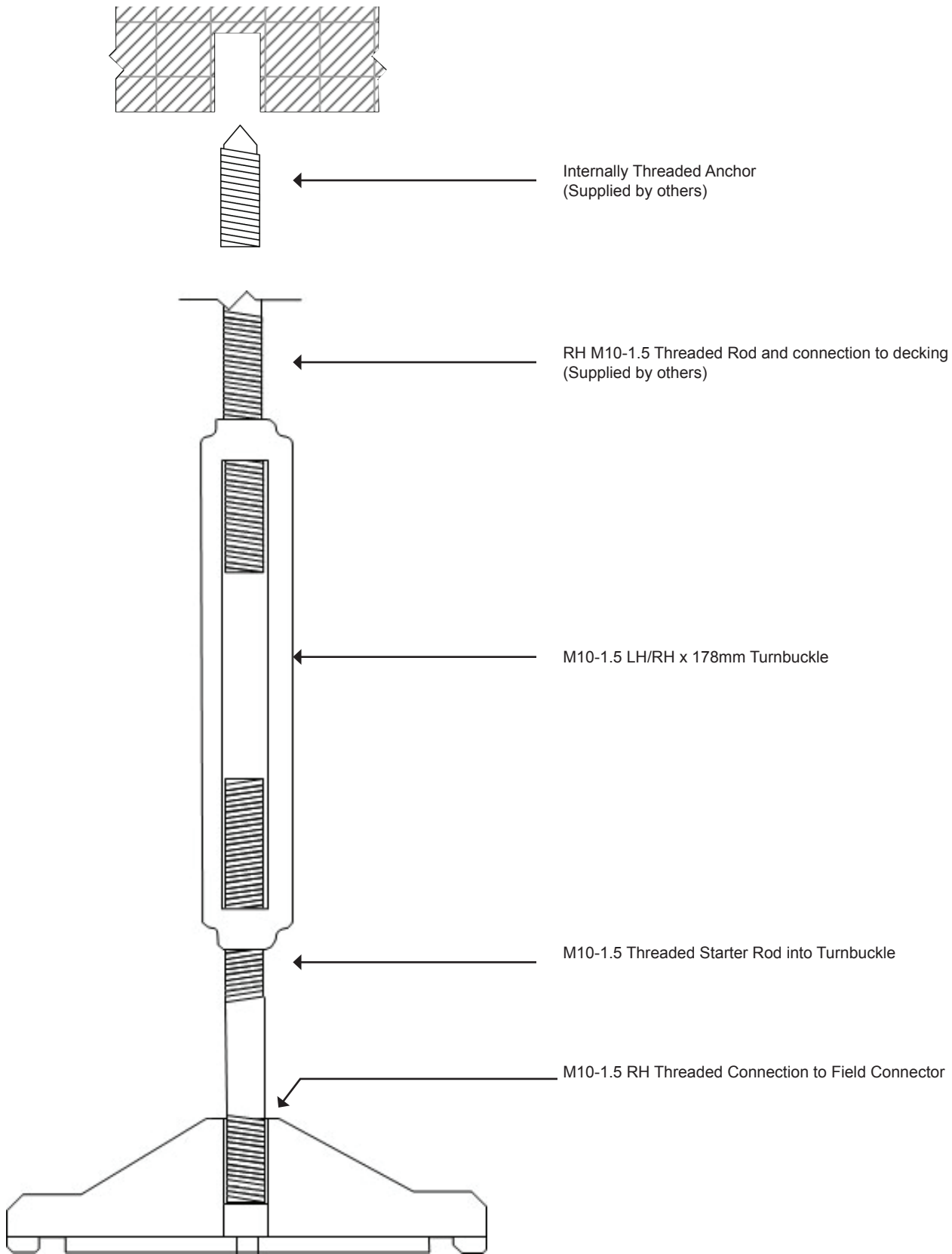
**Fixed Installation Detail**

Perimeter Extrusions are designed to create a clean corner joint assembly. Perimeter Angles can be cut on site to desired length when assembled along perimeter walls. Perimeter Angles can also be bolted directly to the wall with appropriate fasteners for wall type.

Note, pre-drilling is recommended and through holes are suggested for simpler light fixture or drop ceiling tile installation.

**Note that if it is necessary to cut the tees and mains around the perimeter of the space (as is typical in most cases), the cut ends need to be coped to match the original factory finish. This is to ensure full load capacity of the grid. See Field Coping Guidelines Appendix at the end of the installation guide for more information.**

## TURNBUCKLE ASSEMBLY



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## Safety Guidelines

### THIS INFORMATION MUST BE SHARED WITH ALL SERVICE PROVIDERS WHO INTEND TO SUSPEND SERVICES FROM THE TATE GRID SYSTEM

Tate Grid is a structural ceiling system designed to support static vertical loads. When installing services to the bottom M10-1.5 threaded channel, the following instructions must be adhered to:

1. Tate Grid is limited to a maximum point load of 1.7 kN or maximum safe uniform load of 2.4 kN/m<sup>2</sup>
  - a. Exceeding these values may cause a failure in the system.
2. Do not torque the threaded rod or bolts above 4Nm. Over torquing will damage the threads of the M10-1.5 slot reducing the load capacity of the Tate Grid System.
  - a. Failure to adhere to this may result in the shearing of bottom slot threads reducing the load capacity of the Tate Grid system.
3. Equal care must be taken during the installation of the Tate Grid to not exceed the 4Nm torque limit on the top screws connecting the Tate Grid to the suitable connector.
  - a. Failure to adhere to this may result in the shearing of top slot threads reducing the load capacity of the Tate Grid system.
4. Only screws supplied by Tate should be used on the top slot.
  - a. Failure to adhere to this may result in the reduction of the load capacity of the Tate Grid system.
5. There must be at least 16mm thread engagement between threaded rod or bolt supporting the suspended service(s).
  - a. Failure to adhere to this may result in the reduction of the load capacity of the Tate Grid system.
6. Do not impose a dynamic load on the connection to Tate Grid. During installation of supported services, bracing is required to prevent dynamic load on the Tate Grid ceiling
  - a. Moment forces imposed on the Tate Grid system may cause failure of the connection between the services and the Tate Grid system.
7. All bottom thread fixings should be completed with suitable washers.
8. Tate Grid is NOT a walk-on ceiling.

