

# Tate Duo

## Grid Specifications

Pre-engineered and factory-produced aluminum structural ceiling grid with continuously threaded slots (M10-1.5 & M12-1.75)

Grid consists of Main Runners with notches for precise location and connection of coped Structural Tees using screw connectors

Capable of supporting power modules, light fixtures, cable trays, partitions and other accessories

Load performance based on ceiling support spacing at 1200mm centre to centre:

- Max safe working point load: 3.56kN
- Max safe working uniform load: 5kN/m<sup>2</sup>

System Weight:

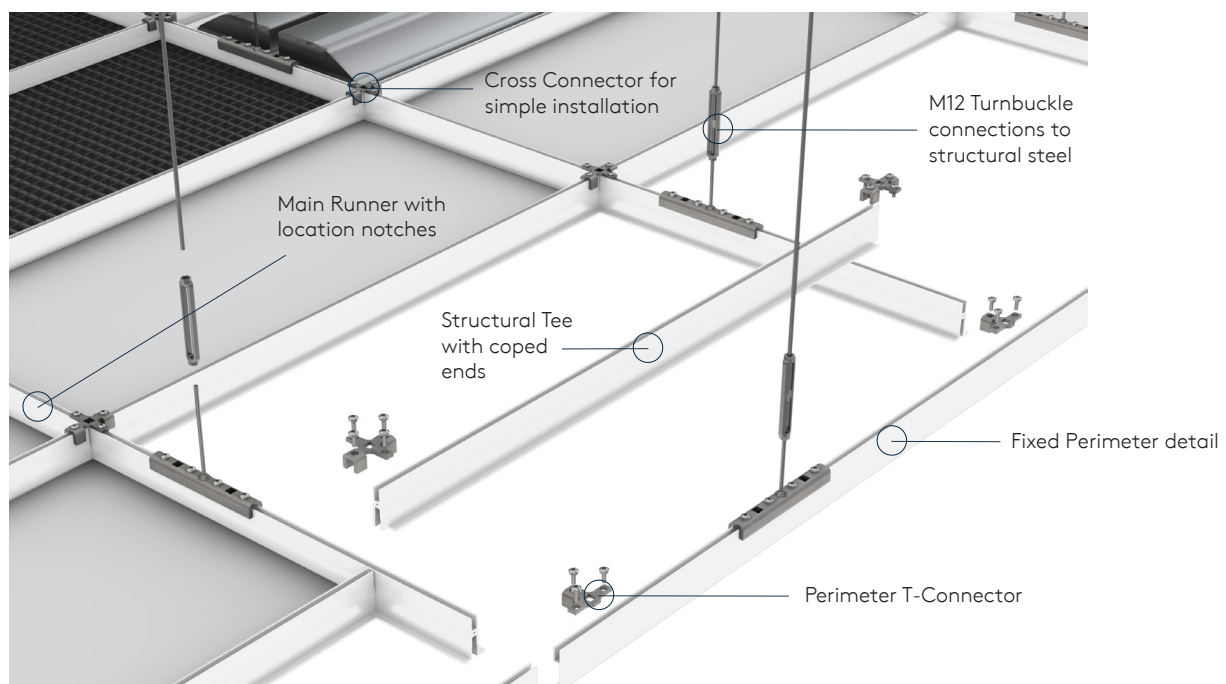
- 600mm x 600mm Grid: 5.37 kg/m<sup>2</sup>
- 600mm x 1200mm Grid: 4.4 kg/m<sup>2</sup>

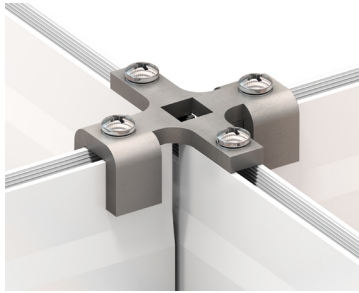
Grid member centre to centre spacing can be selected to accommodate project specific specs. (see page 5 for more information)

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.

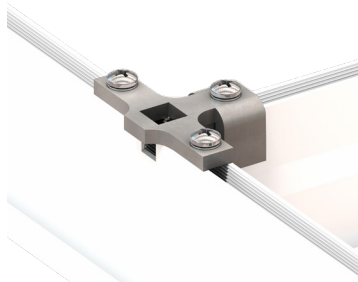
## Key Benefits

- Extreme strength and performance with the ability to suspend a uniform load of 5kN/m<sup>2</sup>
- Multiple grid patterns and configurations available
- Option to increase span length between ceiling supports up to 2400mm
- Flexible continuously threaded slots enable the use of both M10 and M12 bolts
- Fast and easy to install

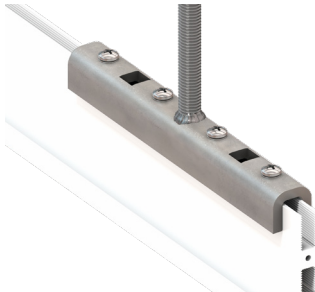




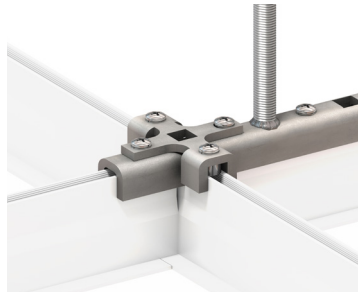
Cross  
Connector



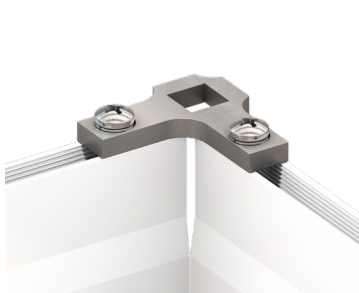
T-Connector



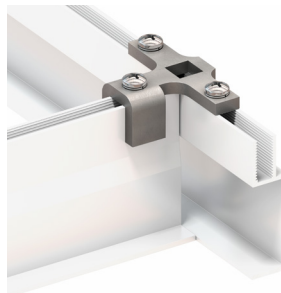
Hanger with M12  
Starter Rod



Hanger & Cross  
Connector with Spacer



L-Connector



T-Connector in  
Fixed Perimeter  
Extrusion



M12 Flanged Square  
Washer

## Connector Specifications

Black painted steel

Attaches to grid members with M10-1.5 screws

M12 turnbuckles threads into  
Hangers on Main Runners

Cross Connectors, T- Connectors & L-Connectors

## Components

3600mm Main Runner / 3600mm  
Perimeter Extrusion

600mm Structural Tee / 1200mm  
Structural Tee

Cross Connectors, T-Connectors & L-Connectors

Hanger with M12 Starter Rod

M10-1.5 x 30mm Screws w/ M10 Lock washer

M10-1.5 x 35mm Screws w/ M10 Spacers for  
Hanger & Cross Connector overlap condition

Splice Kit (See page 6)

M12-1.75 Turnbuckle Assembly

Ceiling Hold Down Clips

Gasket

Ceiling Tiles & Tate LED Lights

Threaded Rod Connection to Building  
(supplied by others)

M12 Flanged Square Washer

## Grid Options

Grid Color ☐ Powder Coat White

Grid Thread Pattern – Bottom Slot

☐ M10-1.5

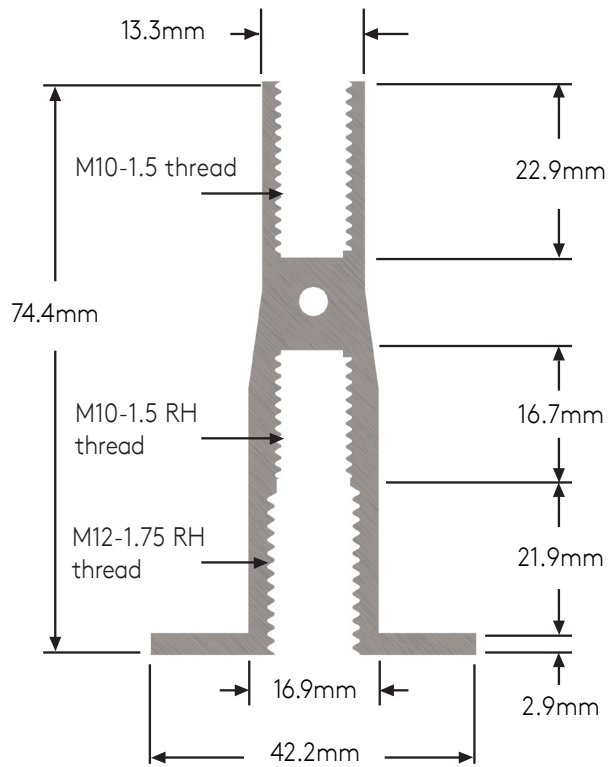
☐ M12-1.75

Grid Spacing – On centre

☐ 600 x 600mm

☐ 600 x 1200mm

### M10-1.5 & M12-1.75 Bottom Slot

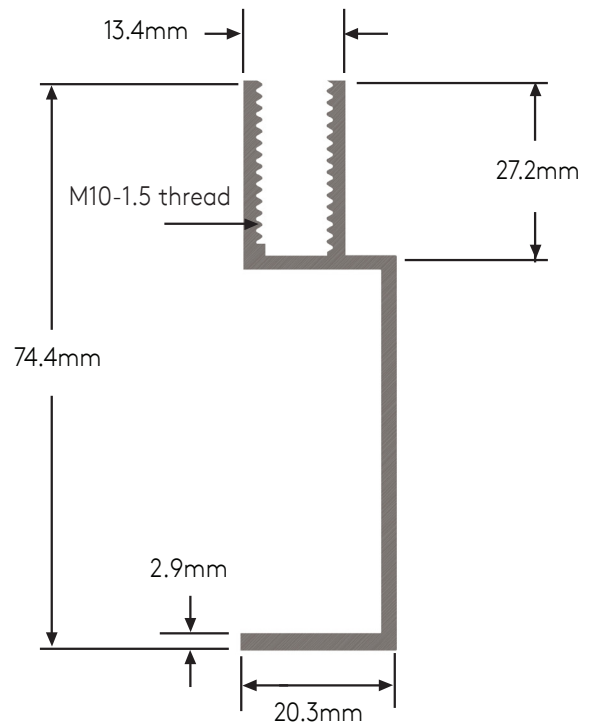


Continuously threaded M10-1.5 top slot

Continuously threaded M10-1.5 and M12-1.75 dual bottom slot

Utilises standard hardware connectors and features of Tate Duo structural ceiling

### Fixed Perimeter Extrusion

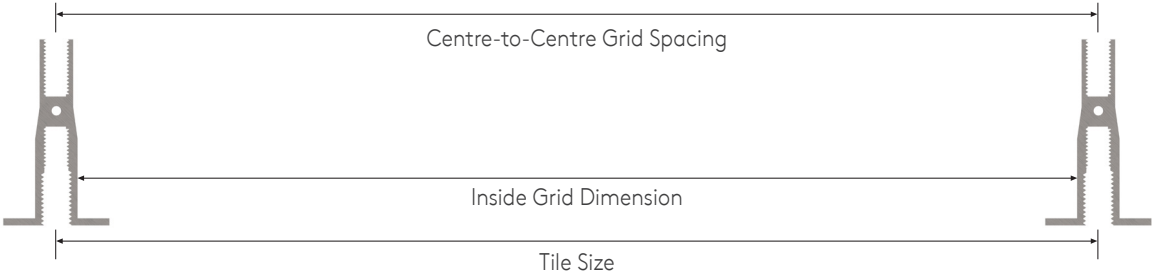


Continuously threaded M10-1.5 top slot

Slim profile perimeter design

Utilises standard hardware connectors and features of Tate Duo structural ceiling

Grid Spacing and Tile Sizing

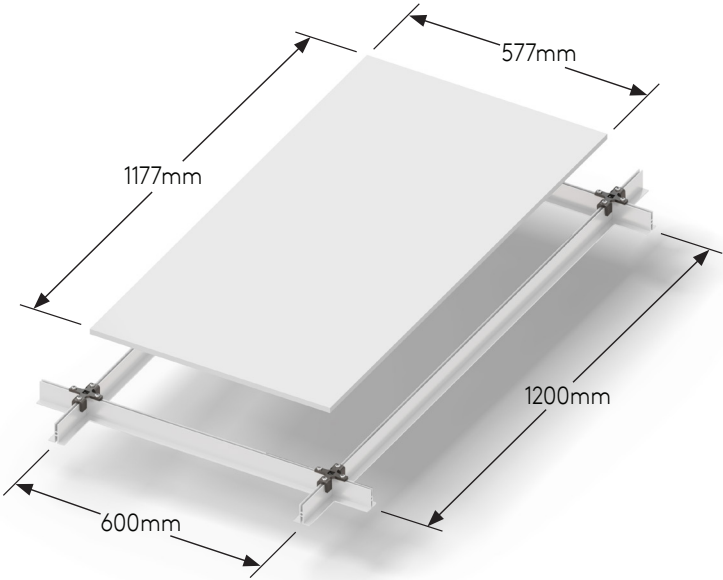


For grid spacing on a 600mm x 600mm or 600mm x 1200mm module size.  
Refer to the below table to determine tile size requirements.

Grid Profile	Grid Spacing (L x W)	Tile Size (L x W)
M10-1.5 & M12-1.75 Bottom Slot	600 x 600mm	577 x 577mm +/- 3mm
	600 x 1200mm	577 x 1177mm +/- 3mm

Note: Maximum Tile Size = Inside Grid Dimension minus 3mm. Minimum Tile Size is based on a minimum overlap on the extrusion flange of 3mm when the tile is shifted all the way to one side.

Grid spacing can be adjusted to fit standard 600x600mm or 600x1200mm nominal tile sizes, depending on the customer's preference.

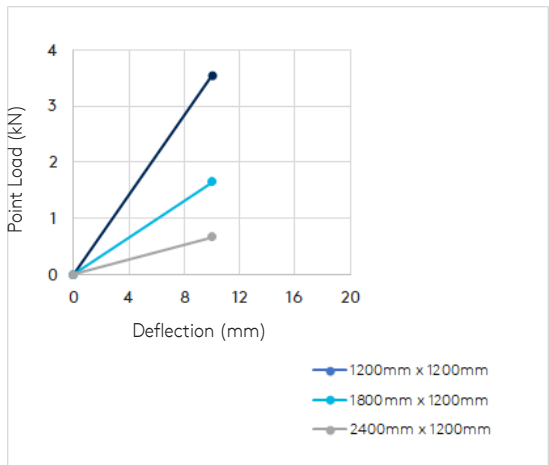
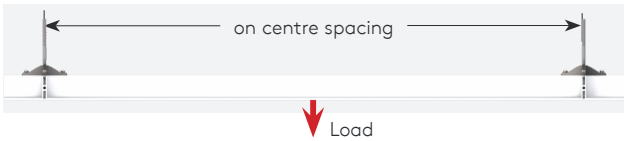


Sizing Based on  
600mm x 1200mm Grid Spacing

Performance Criteria

The bottom side of the structural grid is available with M10-1.5 & M12-1.75 continuous threaded slot for mounting items directly to the grid. Refer to the table below for load performance details on the grid and connections.

Structural Tee Deflection (Midspan Beam)



Calculate midspan beam deflection  
at any point below yield

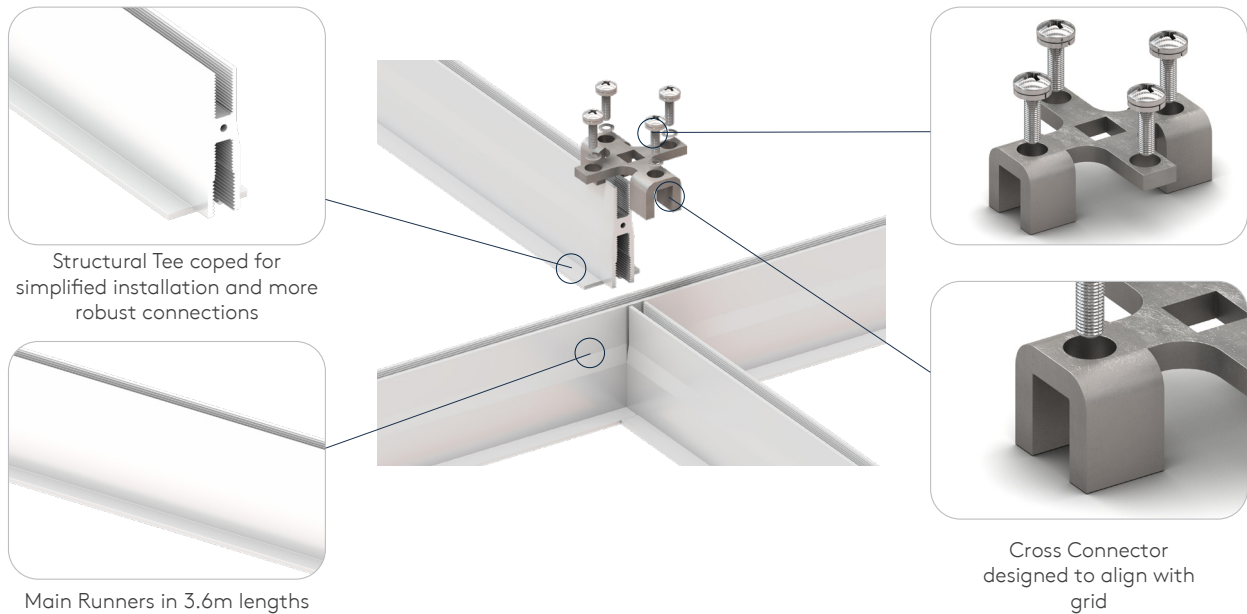
$$S = \frac{WL^3}{48EI}$$

S = Deflection  
W = load  
L = 1200mm  
E = 68.9 kN/mm<sup>2</sup>  
I = 278900mm<sup>4</sup>

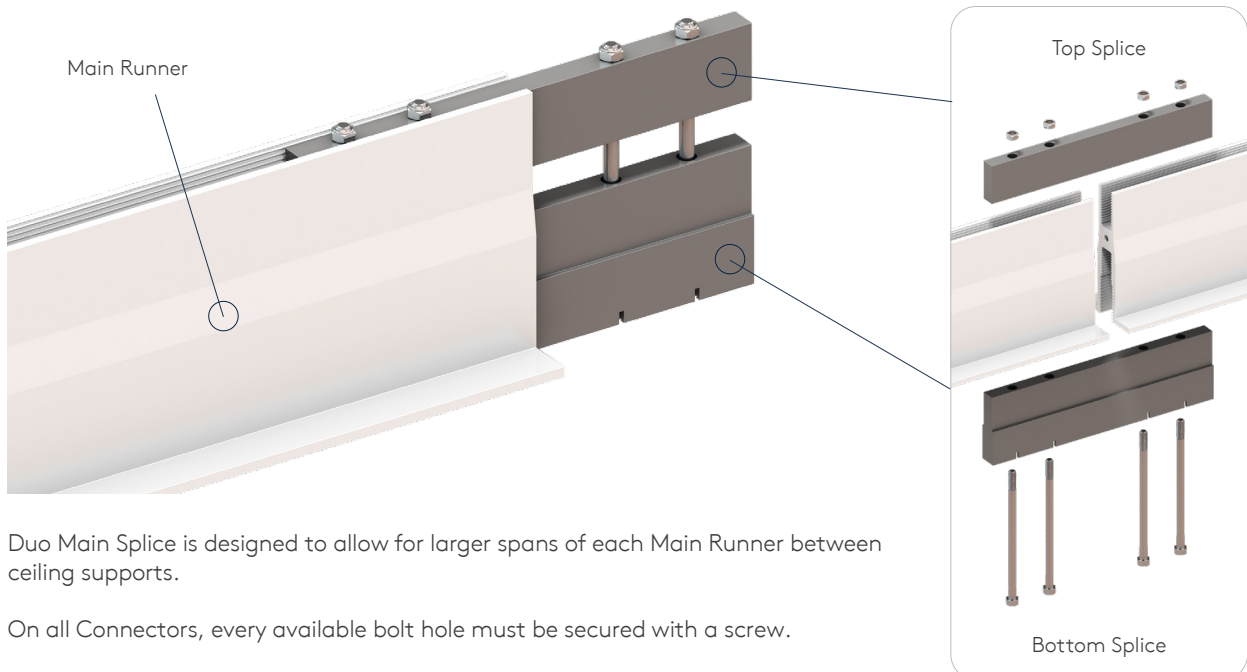
Hanger Configuration	Max Safe Working Uniform Load (kN/m2)	Max Allowable Deflection (mm)	Max Safe Working Point Load (kN)	Ultimate Load (kN)
1200mm x 1200mm	5.0	10	3.56*	7.12
1800mm x 1200mm	3.6	10	1.65*	3.3
2400mm x 1200mm	2.4	10	0.67*	1.34

\*Max safe working point load no less than 1200mm in any direction

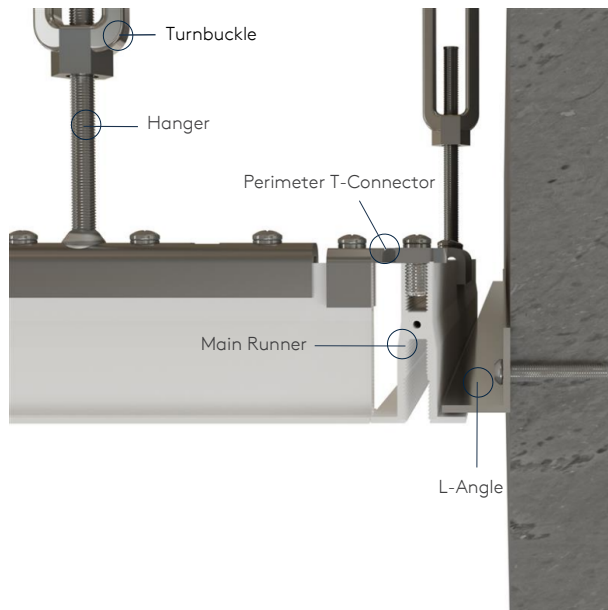
## Field Connector Assembly



## Splice Kit



## Perimeter Details

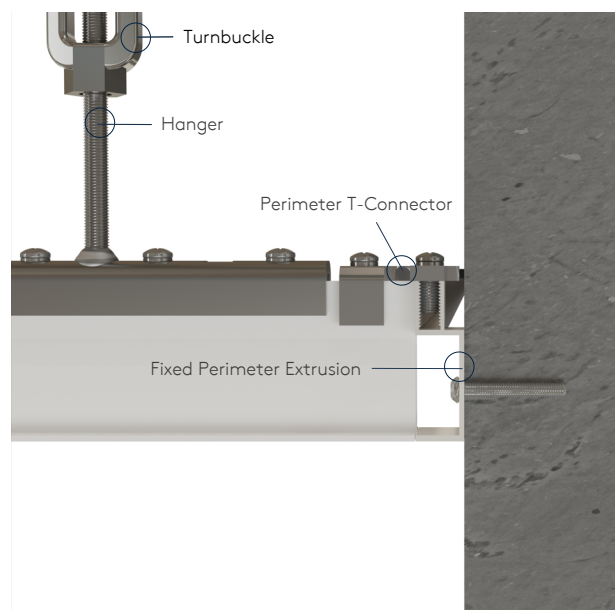


### Floating Installation Detail

Main Runners are used in the floating perimeter detail. When installing with a floating perimeter, a Perimeter Connector can be utilised.

To close the space between the wall and the Main Runner at the perimeter, it is recommended to use an L- Angle that can be fixed to the wall with appropriate fasteners for the wall type.

To ensure full load rating, a Hanger is required at the end of each extrusion that connects to the perimeter. Refer to the image above.



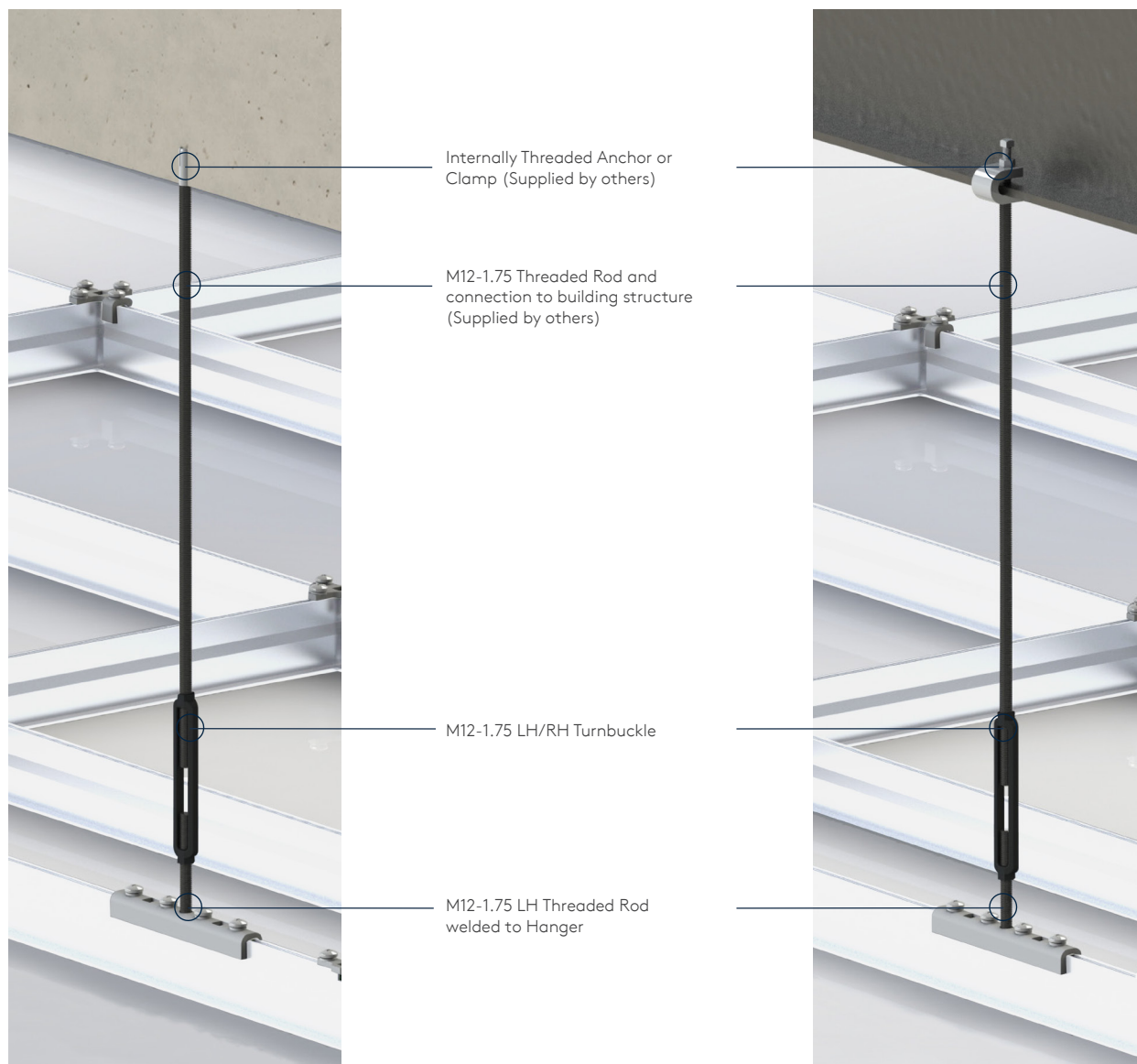
### Fixed Installation Detail

Perimeter Extrusions are designed to create a clean corner joint assembly.

Perimeter Extrusions can be cut on site to the desired length when assembled along perimeter walls. Perimeter Extrusions can also be bolted directly to the wall with appropriate fasteners for the wall type.

To ensure full load rating, a Hanger is required at the end of each extrusion that connects to the perimeter. Refer to the image above.

## Fixing to Building Structure



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Please note we reserve the right to change specification or design and supply products which may differ from those described and illustrated without notice and without liability.

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