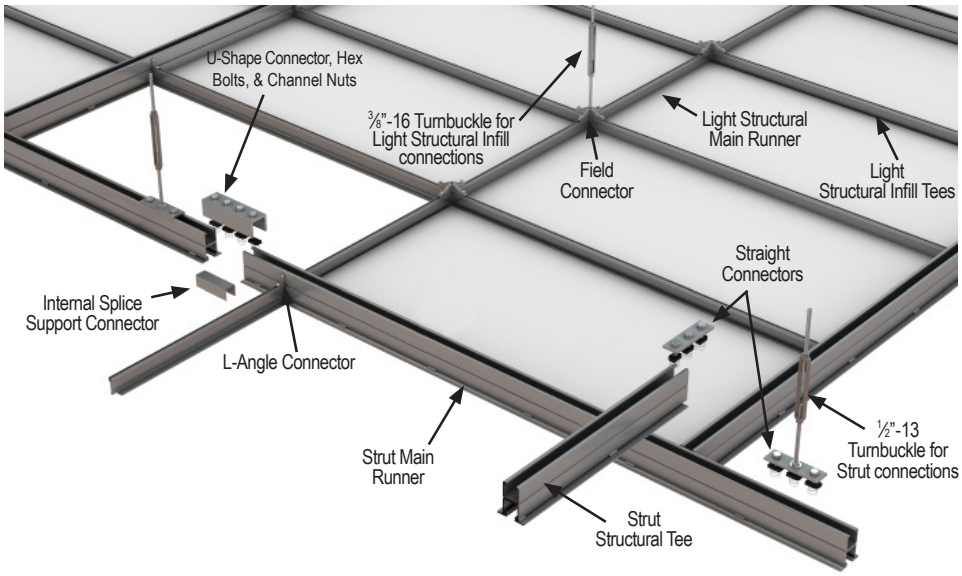
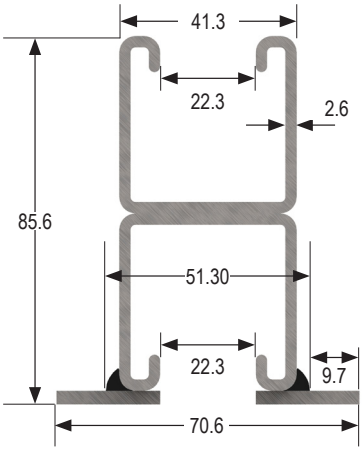
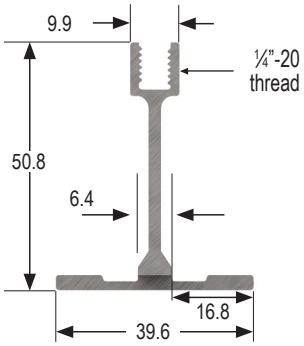
Tate Strut

Metric Tate Strut

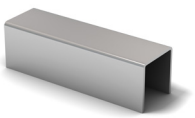




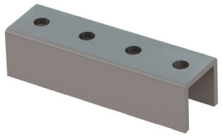


**Note: All Dimensions are in Millimeters*

Straight Connector

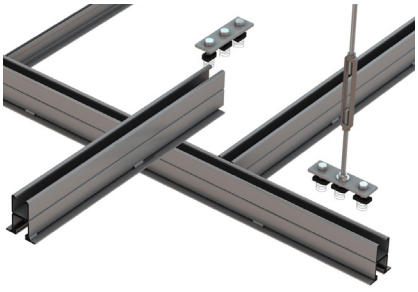


Internal Splice Support Connector

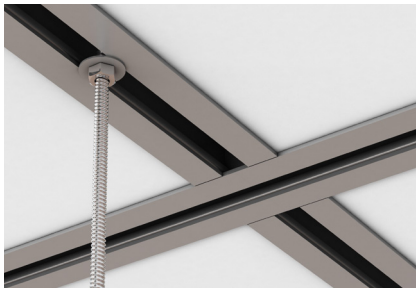


U-Shaped Connector

Field Connector



Simple Channel Nut Assemblies are used for Strut connections



Open slots for connecting cable trays, utilities and other accessories via Channel Nuts

STRUCTURAL GRID SPECIFICATIONS

- Structural suspended ceiling grid system consists of steel strut with Light Structural Infill
- White painted finish
- Steel Strut profile
  - Center-on-Center Grid Spacing can be selected to accommodate project specific specs (See page 3)
  - Max static/uniform load based on span (table 1)
  - Continuous slot on top and bottom of Steel Strut
  - Capable of supporting cable trays, caging, and other heavy duty accessories
- Light Structural Infill
  - Center-on-Center Grid Spacing can be selected to accommodate project specific specs (See page 3)
  - Structural aluminium extrusion
  - Capable of supporting ceiling tiles, light fixtures,and other lightweight flange supported accessories

COMPONENTS

- Steel Strut Grid
  - Steel Strut Main Runner
  - Steel Strut Structural Tees
  - Strut Straight Connectors
  - U-Shaped Strut Connector
  - Internal Splice Support Connector
  - ½"-13 Channel Nut with Spring
  - ½"-13 x 1.5" Hex Head Bolt
  - ½"-13 x 7.85" lg Turnbuckle w/ Starter Rod
- Light Structural Infill
  - Light Structural Main Runner
  - Light Structural Infill Tees
  - Light Structural L-Angle Connector
  - Light Structural Field Connector
  - ⅜"-16 x 7" lg Turnbuckle w/ Starter Rod
- Factory Applied Gasket available upon request

COMPONENTS BY OTHERS

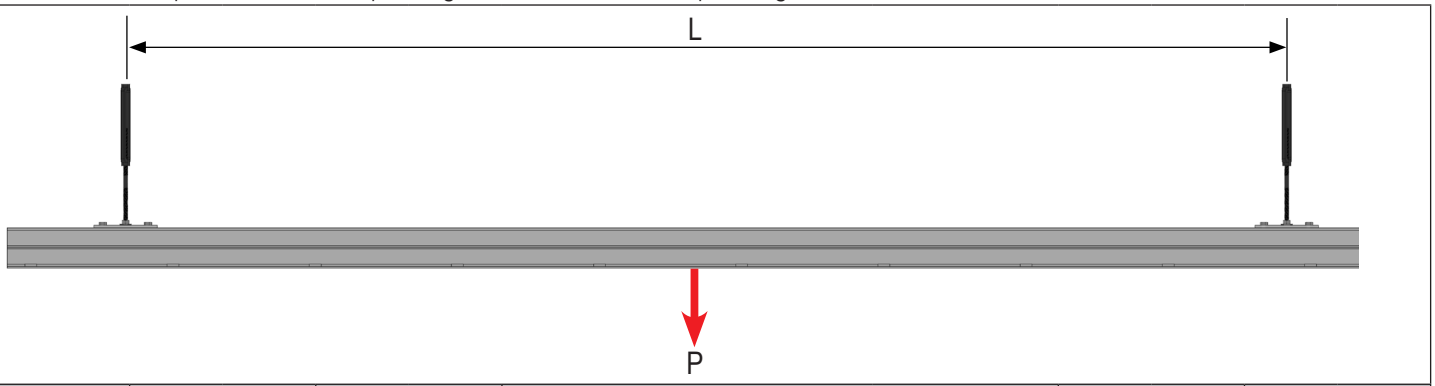
- Ceiling tiles, light fixtures, or other accessories
- All-thread and attachment to building structure
- Channel Nuts and all-thread to attach equipment below steel strut
- Aluminium Perimeter Angle

Tate Access Floors, Inc.
7510 Montevideo Road
Jessup, MD 20794
Tel (410)799-4200

Rev - 03/10/22

TABLE 1: PERFORMANCE CRITERIA BASED ON SPAN LENGTH

To determine load capacities and corresponding deflections based on span lengths, use this chart



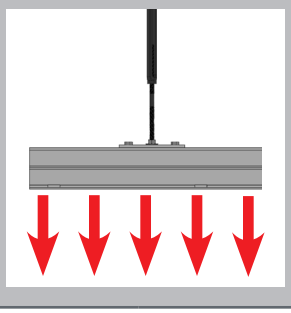
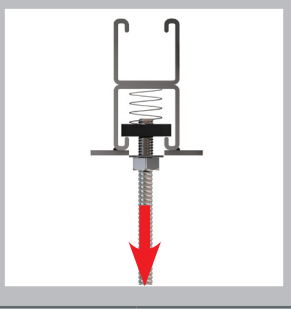
SPAN (cm)	P		D		P			ULF		USF	
	Max Point Load @ Yield Point[1] (kN)		Max Deflection @ Yield Point (cm)		Max Point Load @ Various Deflections (kN)			Max Uniform Load (kN/m)		Max Uniform Load (kN/m^2)	
					SPAN /180	SPAN/240	SPAN/360				
Safety Factor	2x	4x	2x	4x	2x	2x	2x	2x	4x	2x	4x
120	7.79[2]	3.89[2]	0.41	0.20	7.79	7.79	6.29	3.25	1.62	5.41	2.70
150	7.79[2]	3.89[2]	0.81	0.40	7.79	6.04	4.02	2.60	1.30	3.46	1.73
180	7.50	3.75	1.34	0.67	5.59	4.20	2.80	2.09	1.04	2.32	1.16
210	6.49	3.24	1.84	0.92	4.11	3.08	2.05	1.55	0.77	1.47	0.73
240	5.65	2.82	2.40	1.20	3.15	2.36	1.57	1.18	0.59	0.98	0.49
270	4.99	2.49	3.01	1.50	2.48	1.86	1.25	0.92	0.46	0.69	0.34
300	4.52	2.26	3.74	1.87	2.01	1.51	1.01	0.76	0.38	0.50	0.25

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 300mm of a Main Runner Splice

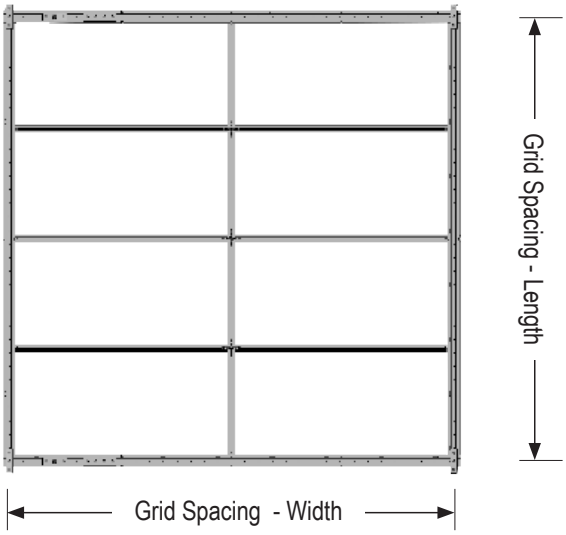
L (Span between Supports) = cm
E (Modulus of Elasticity) = 20.69x10^3 kN/cm^2
I (Moment of Inertia) = 32.84cm^4

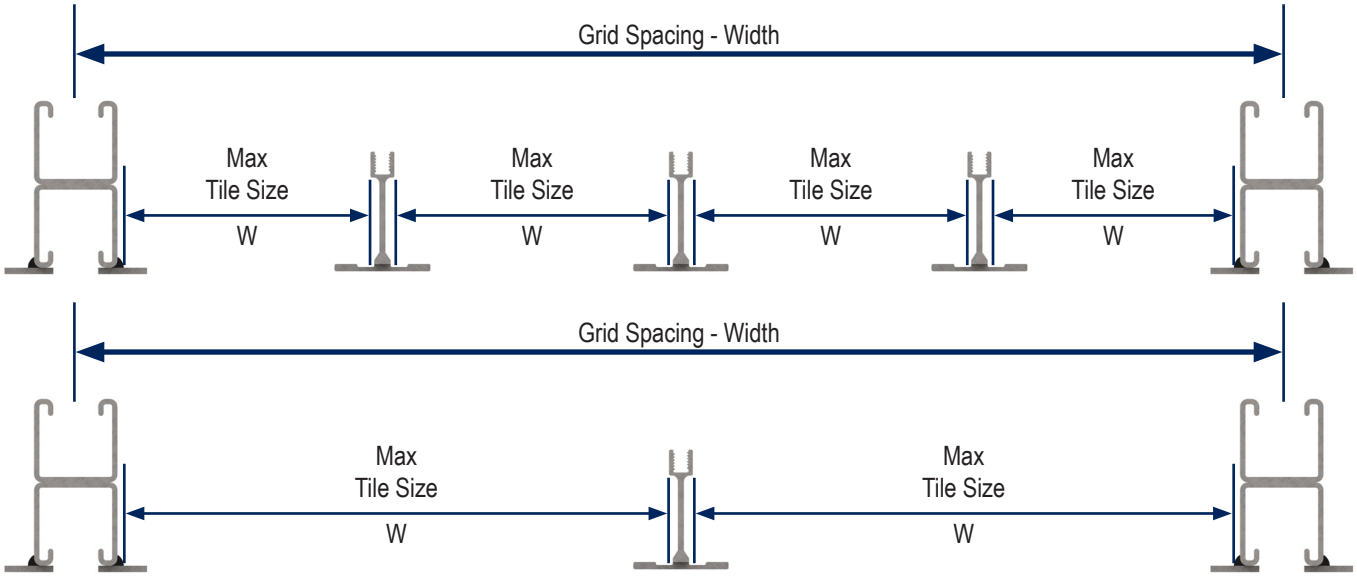
D (Deflection) = PL^3/48EI
ULF (Uniform Load/m) = P/(L/100x2)
USF (Uniform Load/m^2) = P/(L/100)^2

TABLE 2: PERFORMANCE CRITERIA BASED ON SLOT CONNECTION

Hanging Method	 Connection to Top Slot		 Connection to Bottom Slot	
Safety Factor	2x	4x	2x	4x
Min. Design Load (kN)	15.60 kN	7.80 kN	7.80 kN	3.9 kN
Min. Ultimate Load (kN)	31.15 kN	15.57 kN	15.60 kN	7.8 kN

DETERMINING GRID SPACING AND TILE SIZING: EXAMPLE





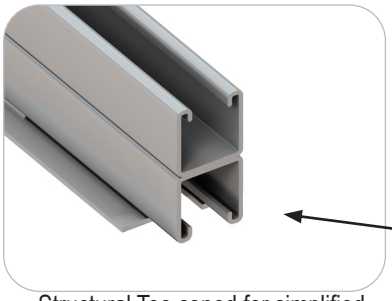
If you want the Strut Spacing to be on a 2400mm x 2400mm module size, use this table to determine tile size requirement:

Grid Profile	Grid Spacing (W x L)	Tile Size (W x L)
Tate Strut	2400mm x 2400mm	579mm x 1170mm +/- 4mm

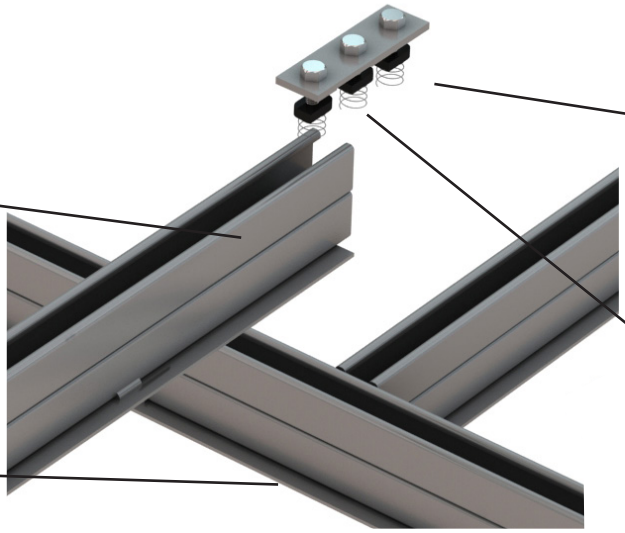
If you want the Strut Spacing to be on a larger module size to fit standard 600mm x 1200mm nominal tile sizes, use this table:

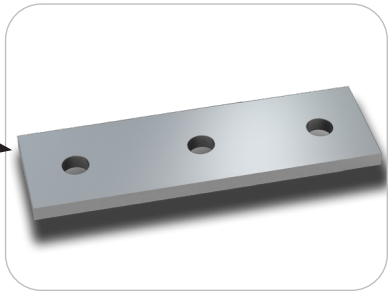
Grid Profile	Grid Spacing (W x L)	Tile Size (W x L)
Tate Strut	2458mm x 2446mm	593mm x 1193mm +/- 4mm

STRAIGHT CONNECTOR ASSEMBLY

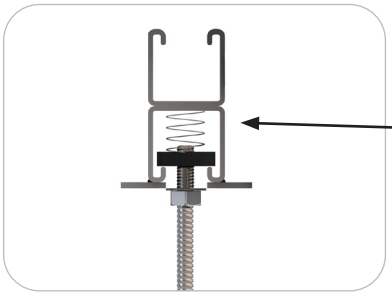


Structural Tee coped for simplified installation and stronger connections

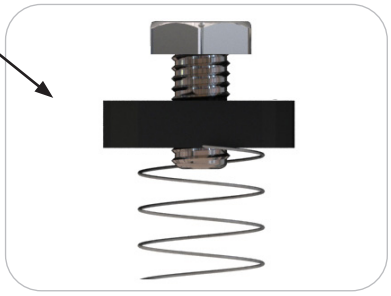




Straight Connector



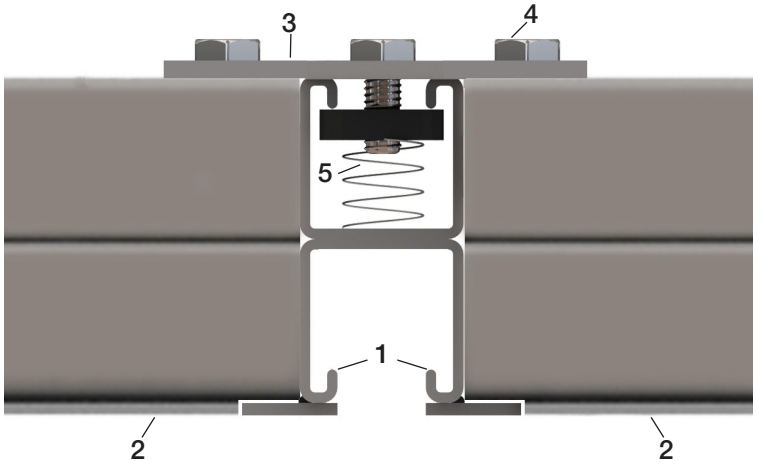
Channel Nuts are used to secure the load to the Strut System



Channel Nuts are used to secure connections to Main Runners and Structural Tees

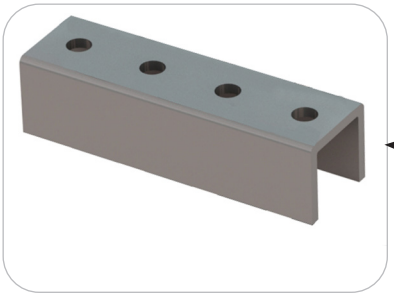
STRAIGHT CONNECTOR ASSEMBLY

1. Main Runner
2. Structural Tees
3.Straight Connector
4. Hex Bolt
5. Channel Nut and Spring

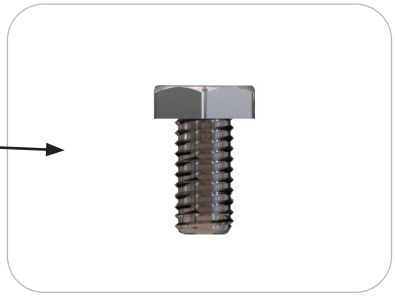


Straight Connector joining two Structural Tees on either side of a Main Runner. Note all Structural Tees have factory coped ends

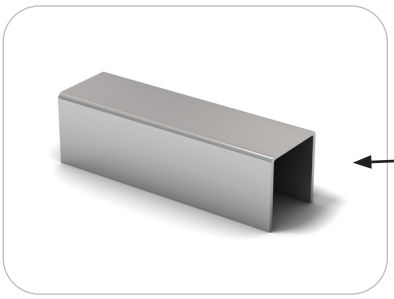
U-SHAPED & INTERNAL SPLICE SUPPORT CONNECTOR ASSEMBLY



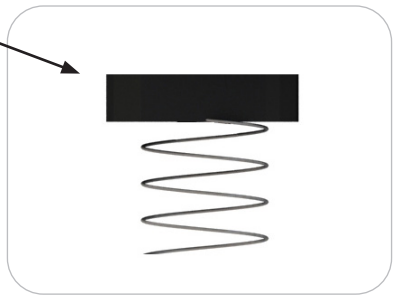
U-Shaped Connection



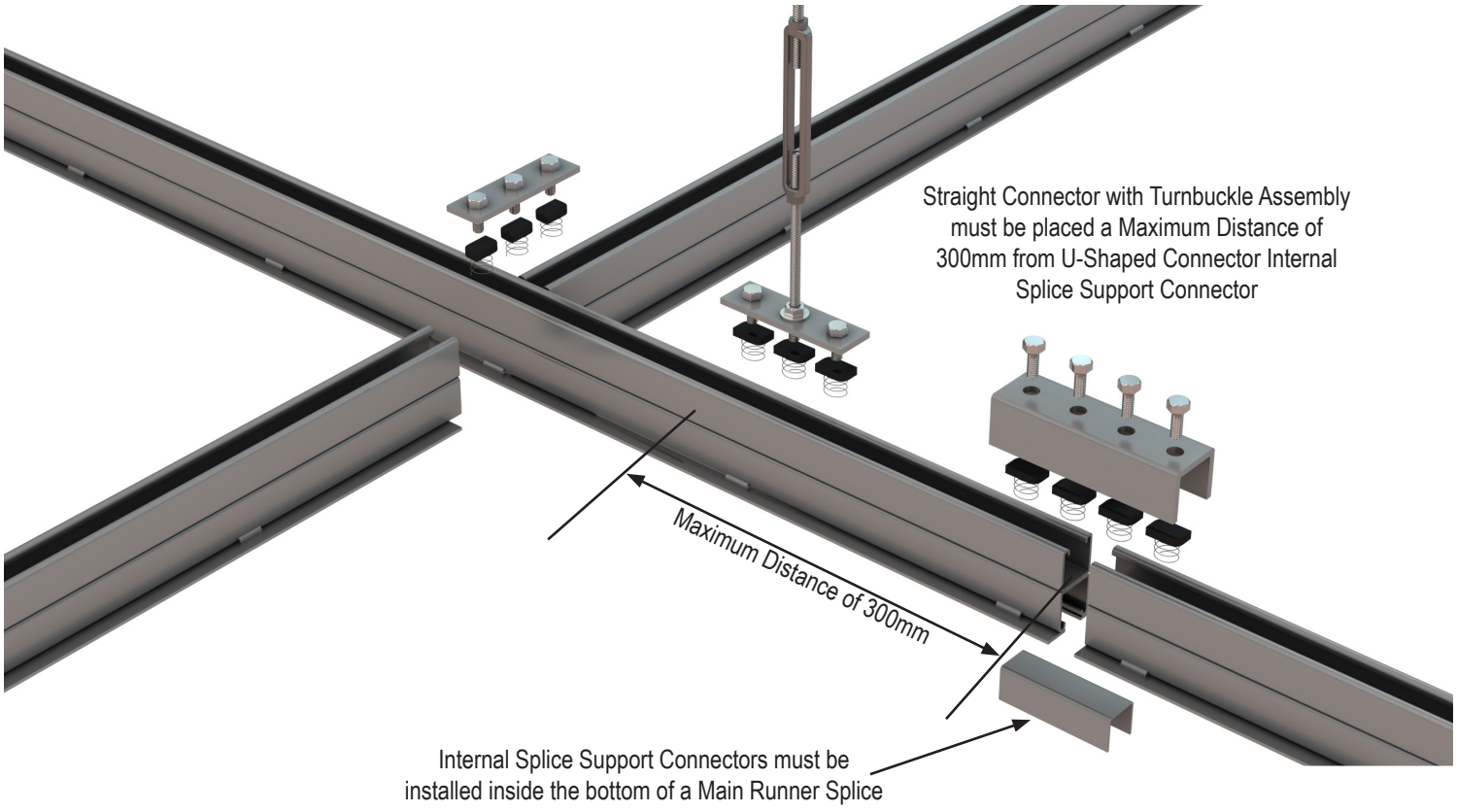
Hex Nut



Internal Splice Support Connector

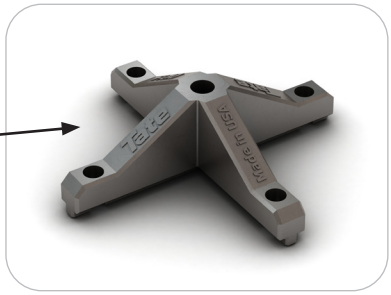


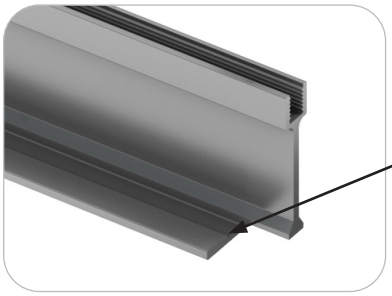
Channel Nut



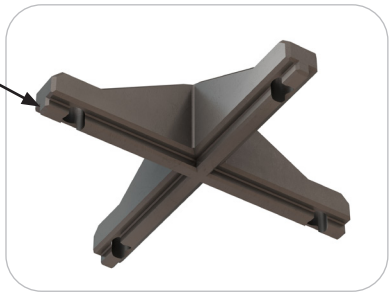
FIELD CONNECTOR ASSEMBLY

Light Structural Main Runners notched to positively position connectors on center every time





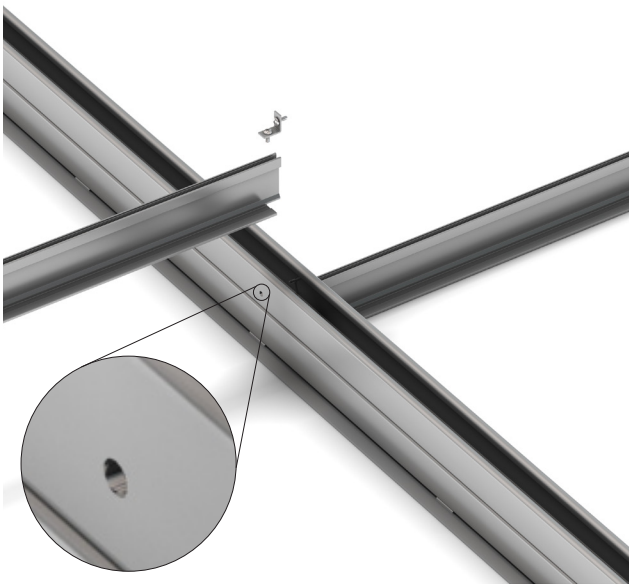
Light Structural Infill coped for simplified installation and stronger connections



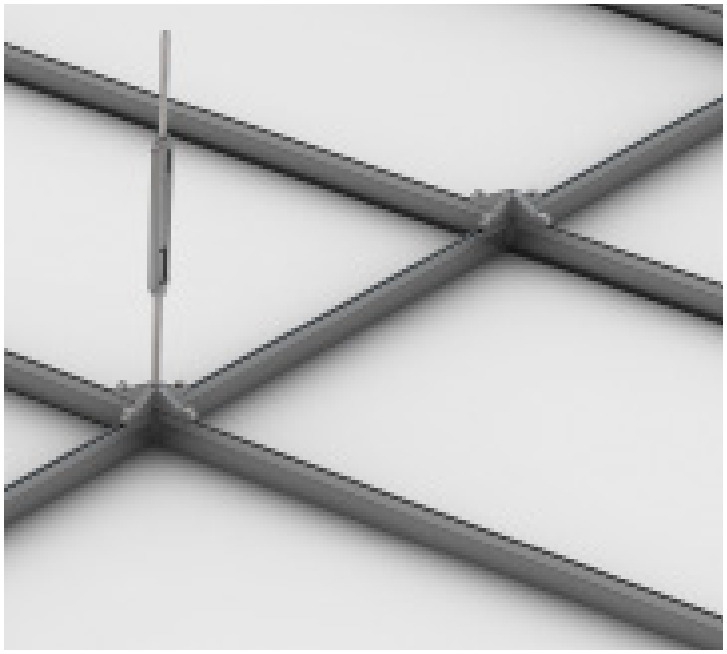
Ribs on connector to align with grid and prevent racking

LIGHT STRUCTURAL INFILL

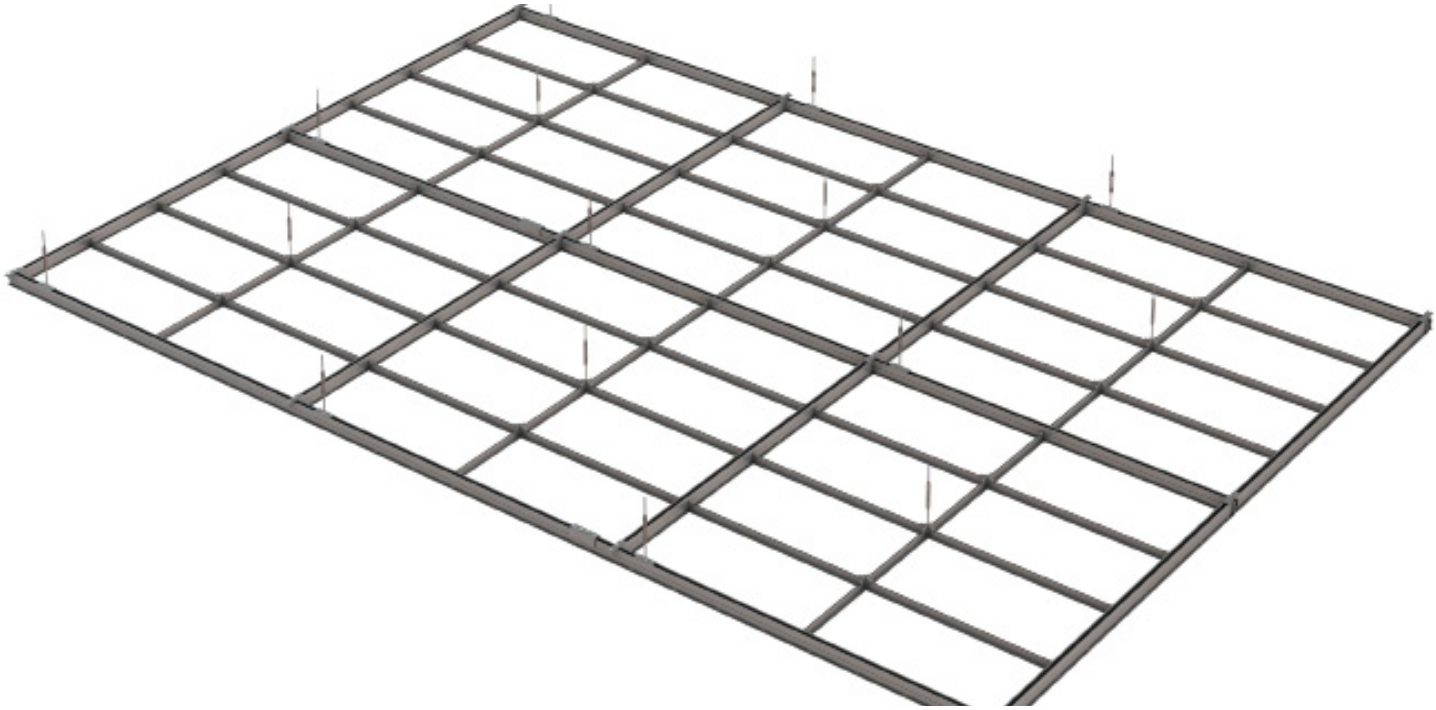
Coped Light Structural Infill connection via L-Angle Connector and pre-drilled Main Runner for simple assembly



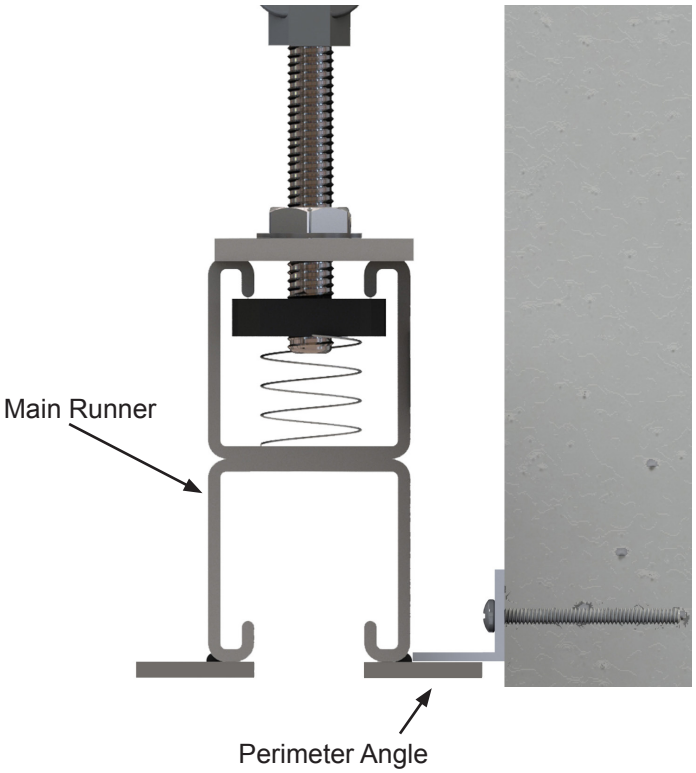
Light Structural Infill with Field Connectors and Turnbuckle Connection.



Repeating infill pattern between struts as per project specification.

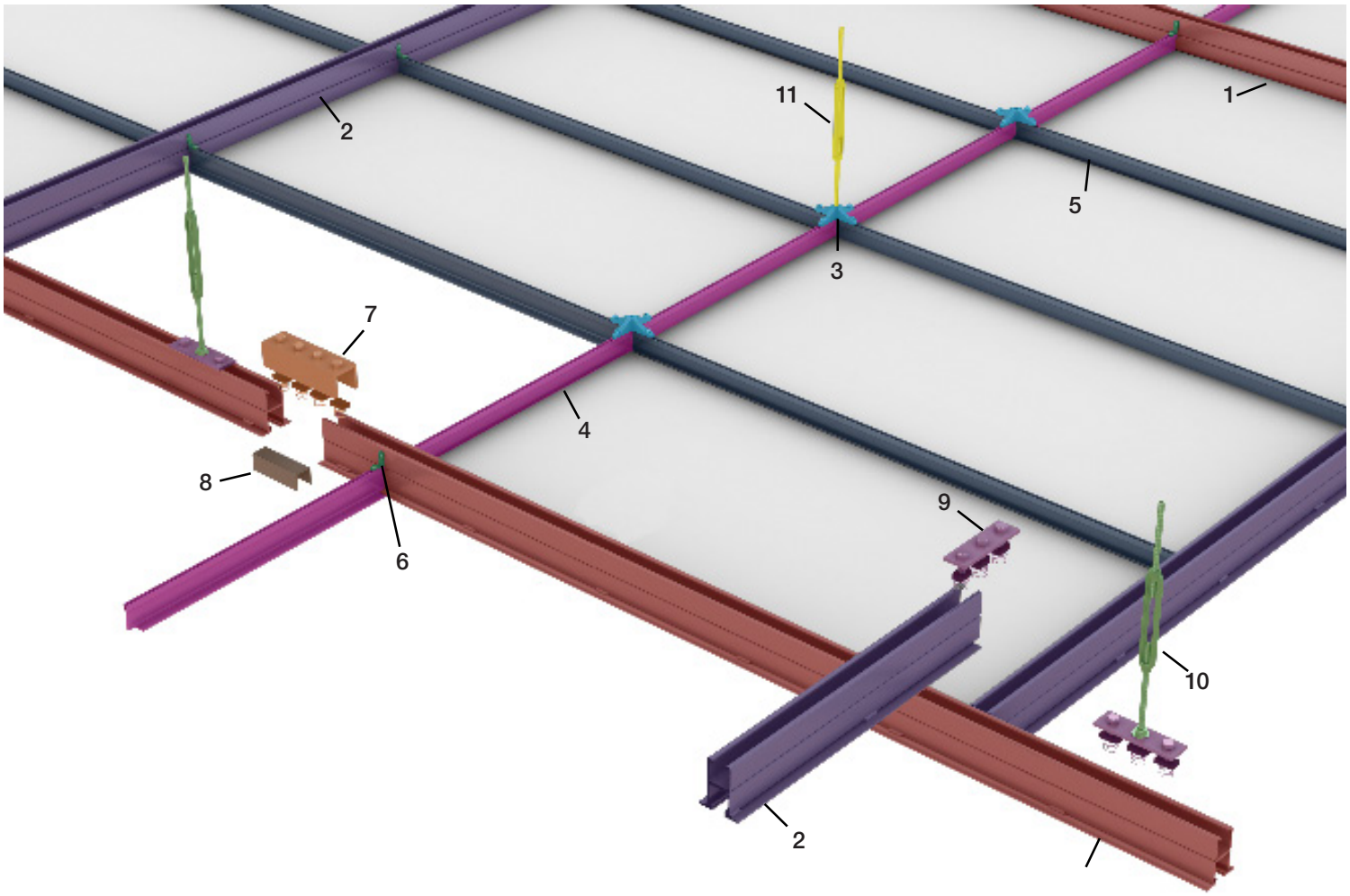


PERIMETER ANGLE



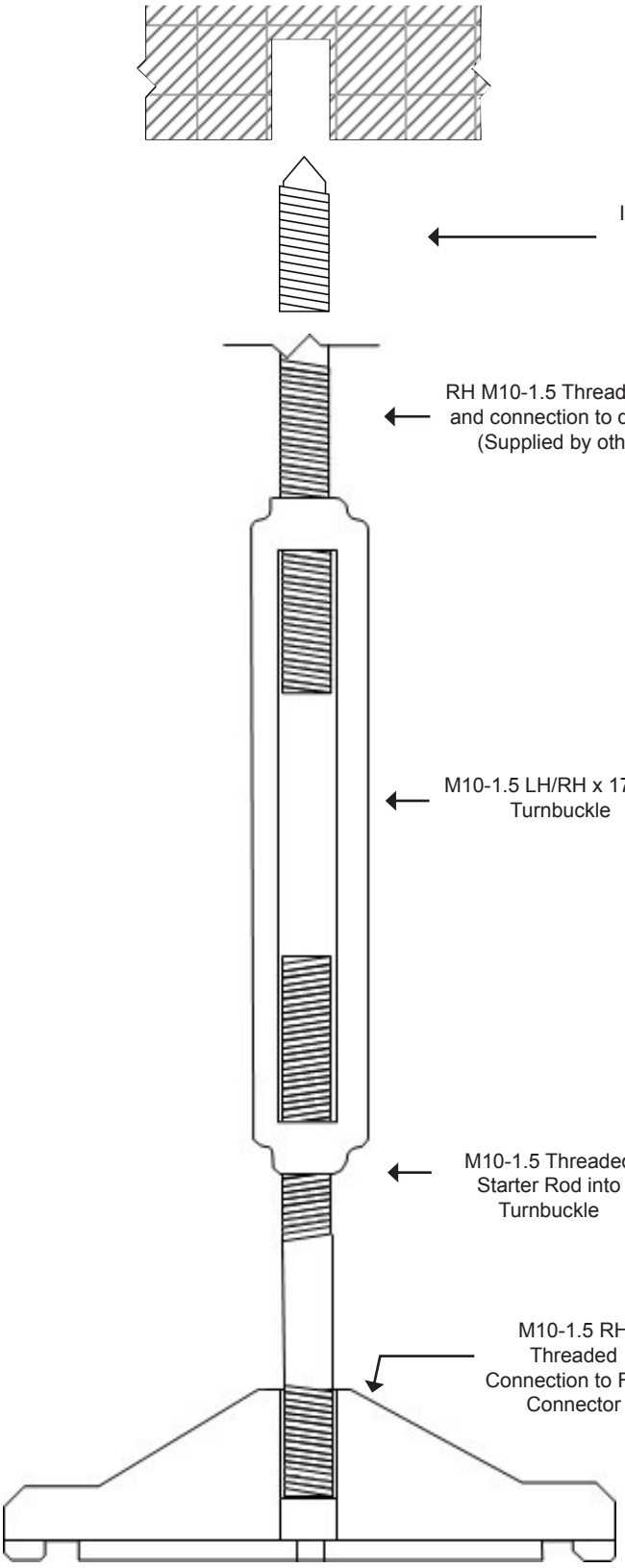
Main Runners and Structural Tees are utilized when installing with a floating detail in conjunction with Perimeter Angles. Perimeter Angles can be cut on site to desired length when assembled along perimeter walls. Perimeter Angles are bolted directly to the wall with appropriate fasteners for wall type.

600mm X 1200mm CEILING GRID WITH 1200mm X 1200mm TURNBUCKLE LAYOUT



1 Strut Main Runner	2 Strut Structural Tee	3 Field Connectors	4 Light Structural Infill Main Runner	5 Light Structural Infill Tees	6 L-Angle Connector
7 U-Shaped Connector	8 Internal Splice Support	9 Straight Connector	10 ½"-13 x 7.85" lg Turnbuckle	11 ⅜"-16 x 7" Turnbuckle	

FIELD CONNECTOR TURNBUCKLE ASSEMBLY



STRAIGHT CONNECTOR TURNBUCKLE ASSEMBLY