

Tate Asia-Pacific Pty Ltd. Tate Grid Data Centre Structural Ceiling

SECTION 09 54 00 SPECIALTY CEILINGS

PART 1. GENERAL

1.1 WORK INCLUDED

A. Section Includes: Extruded aluminium suspended ceiling grid system including:

1. Aluminium ceiling grid.
2. Grid connectors and fasteners.
3. Wall angle and edge trim.

1.2 DESIGN REQUIREMENTS

A. Ceiling system shall be capable of directly supporting cable trays, utilities, light fixtures, HVAC registers and other accessories as indicated per area of work.

1.3 WARRANTY

A. Structural ceiling grid shall be warranted against defects in materials and workmanship for a period of 12 months from shipment.

PART 2. PRODUCTS

2.1 MANUFACTURERS

A. Basis of Design: Product specified is the Structural Ceiling Grid shall be factory as manufactured by Tate

2.2 DESIGN FEATURES: Structural Ceiling grid shall include the following features:

A. 600 mm x 600 mm OR 600 mm x 1200 mm centred grid system with continuous threaded M10 slot.

B. 3600 mm Main Runners and 1200 mm Structural Tees shall be notched on 600 mm centres for easy system installation and positive positioning of 600 mm and 1200 mm Structural Tees.

C. Connectors to include ribs to align system with grid on 600 mm OR 1200 mm centre and prevent racking.

D. System is capable of fitting most commonly supplied 600 mm square +/- 3 mm size ceiling tiles, light fixtures and HVAC registers.

E. 600 mm and 1200 mm Structural Tees shall be cut back for vertical support through flange grid contact to 300 mm Main Runners.

- F. Accepts standard 600 mm ceiling panels and light fixtures.
- G. Connectors include M10 threaded turnbuckle connections
- H. On site modifiable connectors for perimeter installation.
- I. Connectors shall be constructed of powder coated black steel parts.
- J. Field XL Connector shall be utilized for 3600 mm Main Runner splice locations.
- K. M10 button head Philips head screws with lock washer shall be utilized to secure connectors to Main Runners, Structural Tees, and Perimeter Angles.
- L. System Weight:
 - i. 600 mm x 600 mm Grid: 4 kg/m²
 - ii. 600 mm x 1200 mm Grid: 3 kg/m²

2.3 STRUCTURE

- A. Structural Ceiling grid shall be installed with **a Fixed OR a Floating OR no** perimeter angle condition option and on a **600 mm x 600 mm OR 600 mm x 1200 mm** grid supported with spacing of **1200 mm x 1200 mm** connection to structure above.
- B. Main Runners, Structural Tees, and Perimeter Angles shall be constructed of 6106-T6 extruded aluminium and have **white, black, or silver painted aluminium** finish.
- C. Connectors: Field, Field XL, and Perimeter connectors shall be constructed of powder coated steel with a corrosion resistant finish which is black in colour.
- D. Ceiling tiles to be 0.7mm galvanized steel sheet (0.8mm with paint), painted in RAL9016 white with 20% gloss to fit into Tate ceiling system.
- E. Ceiling system shall be capable of supporting a uniform load up to 244 kg/m².
- F. Ceiling system shall be capable of a maximum static point load of 172 kg with standard duty connector.
- G. Ceiling system shall be capable of a maximum static point load of 362 kg with heavy duty connector in line with turnbuckle connection to building structure.
- H. Turnbuckle connection shall be capable of a maximum point load connection to building structure of 362 kg.

PART 3. EXECUTION

3.1 EXAMINATION

- A. Verify ceiling support rod anchors are properly installed in structure above.

3.2 STRUCTURAL CEILING INSTALLATION

- A. Structural Ceiling grid shall be installed on a **600 mm x 600 mm OR 600 mm x 1200 mm** grid supported with spacing of **1200 mm x 1200 mm** connection to decking.
- B. Grid spacing shall be defined by installation of 600 mm Structural Tees.
- C. Support Spacing shall be defined by positioning of turnbuckle connections offset from one another starting from one corner of the interior structural grid assembly and spaced evenly throughout. Additional supports shall be provided as required along the perimeter and at any critical areas or as per seismic or code requirements or considerations.
- D. 3600 mm Main Runners shall be installed on 1200 mm centres and all main runners shall be parallel to one another. 1200 mm Structural Tees shall be installed perpendicular to 3600 mm Main runners. Finally, for 600 mm x 600 mm layouts, a 600 mm Structural Tees shall be installed perpendicular to the 1200 mm Structural Tees.
- E. All work shall be coordinated with all other trades including but not limited to electrical, mechanical, fire protection and furniture.

3.3 PERIMETER INSTALLATION

- A. Structural Ceiling grid shall be installed with **a Fixed OR a Floating** perimeter condition option.
- B. Fixed perimeter installation: Perimeter Angles shall be mounted at level height to interior ceiling grid within 2.5 mm overall and 1.5 mm over any 3000 mm distance. Perimeter Angles shall be fastened to perimeter wall with appropriate wall type fasteners. Perimeter Angles can be field cut with non-ferrous carbide tipped blade. Joints shall fit with no more than 2 mm gaps.
- C. Floating perimeter installation: Perimeter Angles shall be supported from structure at level height to interior ceiling grid within 2.5 mm overall and 1.5 mm over any 3000 mm distance. Perimeter Angles shall be fastened to Main Runners and Structural Tees with perimeter connectors and suspended from structure above. Perimeter Angles shall be field cut with non-ferrous carbide tipped blade. Joints shall fit with no more than 3 mm gaps.

3.4 Cleaning

- A. Inspect above and below installed ceiling system. Remove paint splatters and other spots, dirt, and debris. Touch-up scratches and mars of finish to match original finish.

END OF SECTION

Contact our technical team for support: T: (02) 9612 2300, E: info@tateapac.com



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