

Suggested Architectural Specifications

Part 1: General

1.01 Related Work

- A. Ceiling Lighting – See Section (____)
- B. Air handling units penetrating the ceiling – See Section (____)
(Note: The net opening to the room with KEELGRID[®], as with other wide-faced or clean-room grids, is less than the opening for a standard 15/16” grid. Verify that access doors on drop-in lights and other such items are compatible with the net opening.)
- C. Lay-in Panels or Ceiling Tiles – See Section (____).

1.02 Description:

Work includes labor, material, equipment and tools required in conjunction with the furnishing and installation of a suspended type fiberglass ceiling grid system.

1.03 Quality Assurance

- A. Ceiling work to be performed by an experienced installer with a minimum of 5 years experience with suspended ceiling type of construction.
- B. Fiberglass and Plastic Grid System
 - 1. U.S.D.A accepted
 - 2. ASTM E-84 Flame spread rating of less than 15
 - 3. ASTM E-84 Smoke density rating of less than 200
 - 4. Class I (UBC) / Class A (NFPA) Fire rating
- C. Comply with local government regulations.
- D. Accessories
 - 1. Hanging wire to be 12 gauge galvanized wire.
 - Option: Hanging wire to be 12 ga Stainless Steel
 - Option: Hanging wire to be 12 Ga Monel.
 - 2. Wall angle fasteners to be the all-plastic drive rivet.
 - Option: Fasteners to be stainless Steel, Aluminum, or screws.
 - 3. Option: Rivet Cross tee, lock and splice clips with one 1/8” inch diameter pop rivets (Stainless steel/aluminum) on each side of the clip. The rivet is to be between the first and second rib on the Tee or 9/16” or more below the top of the inverted tee. Backup washers are to be used with the pop rivets.

1.04 Submittal

A. Product Data

1. Submit manufacturer's data for the grid ceiling and accessory items.

B. Shop Drawings

1. Submit details of grid system layout plan developed from reflected ceiling plan provided by others.

C. Samples

1. Submit 2 sets of sample kits of the ceiling components and lay-in panels.

1.05 Product Delivery, Storage, and Handling.

- A. Deliver materials in Manufacturer's original unopened packages with contents fully identified. Handle and store in accordance with Manufacturer's instructions and recommendations.

1.06 Job Conditions

- A. Do not install materials until the following conditions are met: interior spaces have been enclosed and are weather-tight; work above ceilings has been completed.

Part 2: Products

2.01 Materials

A. Suspended Ceiling Grid System

1. Acceptable manufacturer: suspended ceiling grid system - KEELGRID[®] - as manufactured by Keel Manufacturing, Inc., Columbus, Wisconsin 53925 (800) 765-5335.
2. Exposed ceiling grid components
 - a. 12' (nominal) main runners, 4' (nominal), and 2' (nominal) cross tees manufactured from pultruded fiberglass. 1 3/8" wide face minimum.
 - b. PVC assembly and hold down clips manufactured from virgin PVC.
 - c. Pultruded fiberglass wall angles, 1 1/2" by 1 1/2", and 1/10" thick.

3. Structural Considerations

- a. The grid deflection shall not exceed .133” when subjected to a 7 pound per linear foot loading over a 4 foot unsupported span.
- b. Grid system design shall accept dead load of 2.25 pounds per square foot with hanger wire at 4.0 foot on center or 3.00 pounds per square foot with hanger wire at 3.5 foot on center.
- c. Grid tee members will have a 50% of the yield strength value as determined by a point load applied at the midpoint of a 4 foot simply supported span. This 50% value shall exceed 40 pounds.

Part 3:Execution

3.01 Inspection

- A. The ceiling grid installer must examine the job site and conditions under which the suspended ceiling work is to be performed, and notify the Architect in a timely manner of any unsatisfactory conditions.

3.02 Preparation

- A. Ceiling grid installer shall meet at the project site with the Architect and contractors from related trades working in the areas containing the suspended ceiling system prior to commencement of installation.
 1. Review areas of potential interference and resolve conflicts before proceeding with the project
 2. Coordinate the work with the layout of other work that penetrates the ceiling.
 3. Refer to the approved reflected ceiling plan for ceiling layout.

3.03 Installation

- A. Install the ceiling in accordance with CISCA industry standards and the manufacturer’s printed installation guide.
- B. A laser-leveling device must be used to level ceiling. Hanging wire must be straight or pre-straightened prior to use.

- C. All light fixtures, equipment, air duct diffusers, filters, or ceiling penetrations must be independently hung/supported.

(Note: The net opening to the room in KEELGRID[®] is 22 3/4" x 46 7/8" for a 2x4 system; verify any access door or penetration will function with this opening.)

- D. Main runners are to be installed 4'-0 1/4" on center.

- 1. Option: Install main runners 2' - 0 1/8" on center.

- E. Cross tees installed to form 2x4 grid pattern

- 1. Option: Install cross tees to form 2x2 grid pattern
- 2. Option: Install cross tees to form 4x4 grid pattern

(Note: Special care should be taken to insure ceiling tiles are adequate to span 4x4 opening. Laminated panels should be considered)

- 3. Option: Install cross tees to form 4x8 grid pattern

(Note: Special care should be taken to insure ceiling tiles are adequate to span 4x8 opening. Laminated panels should be considered)

- F. Wall clips installed at all Tee-to-Wall Angle intersections. Fasten clips to wall and Tee with corrosion resistant fasteners.

- 1. Option: Wall clips fastened to wall only on two adjacent walls. The wall clips on the other walls are left free floating.

Flame spread and smoke development ratings are based on the E-84 tunnel test as performed by an independent testing laboratory. These are comparison numbers for design, code and insurance considerations. The test are small-scale tests and in some cases do not represent the hazards under actual fire conditions. Fiberglass reinforced plastic will burn, as will other organic based components, and will produce smoke.