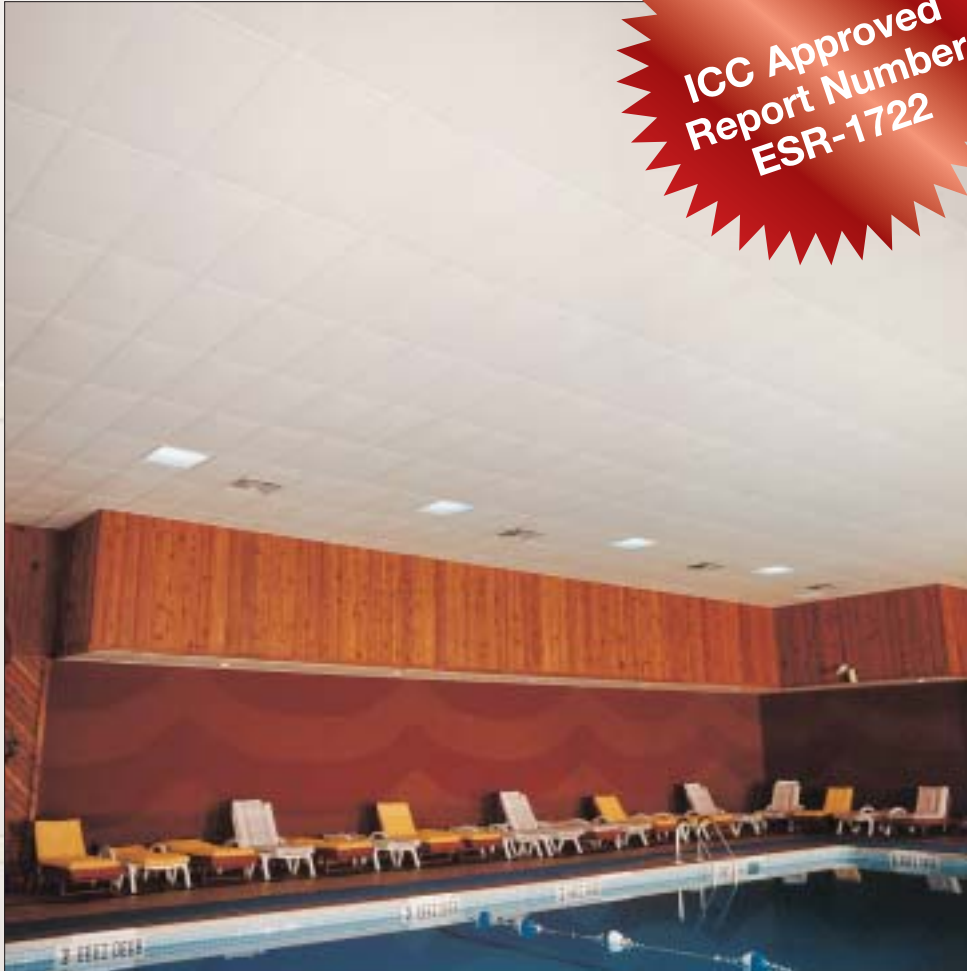


# KEELGRID®

Fiberglass reinforced plastic suspended ceiling system.  
Because fiberglass means high performance.

09 53 33/KEE  
Buyline 6647



**KEEL MANUFACTURING, INC.**



## Engineered to accommodate even 4' X 4' and 4' X 8' panels

### The advantages of KEELGRID®

- ICC approved for use in seismic zones A thru C (ESR-1722)
- Corrosion and rust resistant
- Unaffected by moisture and humidity
- Lightweight, yet rigid
- No paint to blister and peel
- Saves money – does not need to be periodically replaced
- Doesn't conduct heat or electricity
- Installs relatively easily – parts clip together
- USDA Accepted
- Agriculture Canada Accepted
- Class A (1) Flame Spread

### Recommended applications

The KEELGRID® system is an ideal alternative to metal. It is similar in appearance, installation procedure and functional cost to standard metal suspended ceilings. However, KEELGRID® is far superior to metal for many applications because it is made of fiberglass reinforced plastic, a high performance material.

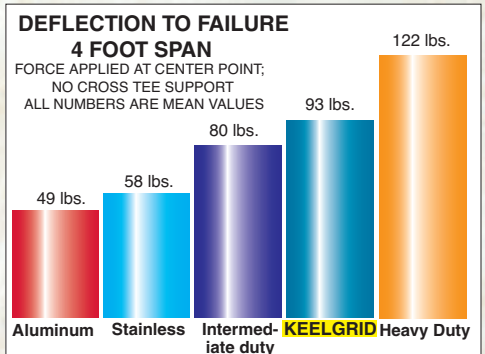
In severe environments, KEELGRID® is combined with frp or other types of ceiling panels to provide a complete system that meets sanitation and corrosion resistance requirements.

KEELGRID® has been installed in many types of buildings. The most common uses are in production areas, kitchens, locker rooms, rest-rooms and storage areas in the following facilities:

- Breweries/ Beverage plants
- Campgrounds
- Canneries
- Chemical Plants
- Clean Rooms
- Concession Areas
- Correctional Facilities
- Dairies
- Fisheries
- Food Processing Plants
- Hospitals
- Kennels
- Laboratories
- Restaurants
- Slaughter Houses
- Supermarkets
- Indoor Swimming Pools
- Universities

### KEEL Manufacturing – the innovators of the frp grid system

We are the pioneers when it comes to frp suspended ceiling systems. With over 25 years of experience in fiberglass reinforced plastic for construction, our company has a long history of actual installation experience with KEELGRID®. Our staff is extremely knowledgeable and customer references are readily available.

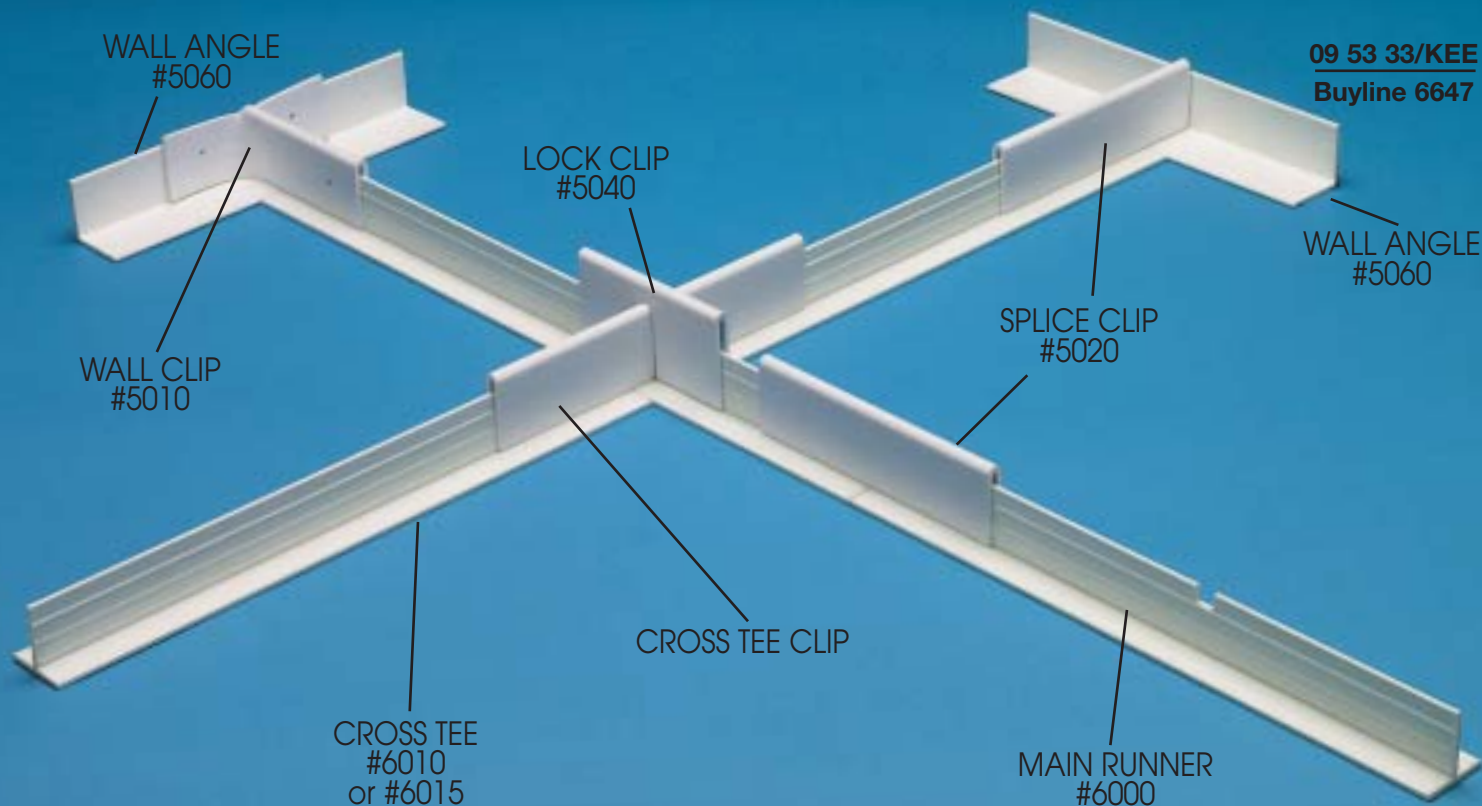


KEELGRID is much stronger than most other systems

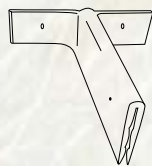
Rating	Per ASTM C-635	
	Light Duty	Intermediate Duty
Max. for 2' X 4' tile	18 lbs. (8.2 kg.)	30 lbs. (13.6 kg.)
Uniform load	7 lbs./ft.	12 lbs./ft.
Hanger wire spacing	4 ft. o. c.	3.5 ft. o. c.

Larger 4' x 4' & 4' x 8' panels have been used successfully in KEELGRID® applications. Some savings are realized from needing fewer KEELGRID® components and some labor savings result from fewer pieces to handle. Also, there are fewer panel-grid seams and easier access to plenums.

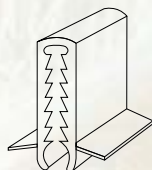
The core of the larger laminated panels can be: extruded or expanded polystyrene; urethanes or isocyanurates; rigid fiberglass, or other core material giving rigidity to the spacing of the skins. Skins can be steel, aluminum, fiberglass, plastic or other sheet material with the desired characteristics. Generally it is necessary to specify a balanced panel with similar skins on both sides.



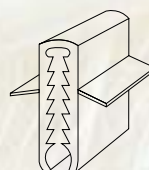
WALL CLIP, Part #5010



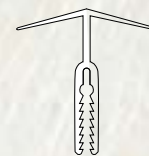
STANDARD HOLD DOWN CLIP, Part #5050



THICK PANEL HOLD DOWN CLIP, Part #5055



2" HOLD DOWN CLIP, Part #5057



## Installation

As the above photo shows, KEELGRID® assembly is similar to most ceiling systems. It is easy to install because the parts are designed to clip together. Main runners are notched to receive the cross tee clip and provide proper spacing of cross tees when installing a standard 2' x 2' or 2' x 4' system. Main runners are pre-drilled on 1' centers for hanging wires. A step-by-step installation guide is shipped with each order to ensure proper installation.

### Unique triple holding power

KEELGRID's unique design includes male-female ridges in the grids and clips. This gives a secure installation, making pop rivets necessary only for the more demanding applications.

### Light fixtures can be surface mounted or drop-in

An independent support clip is available for surface mounting. Drop-in fixtures with hinged doors should be compatible with KEELGRID's net opening of 22.75" x 46.87" or 22.75" x 22.75" for a 2x4 or 2x2 pattern respectively. Many brands of light can accommodate this requirement. A special cross tee is available that will increase the net opening between 2 cross tees to 23".

## Technical data:

(Dimensions nominal)

Length	Width	Height
<b>Main Runner</b> 12' (3658 mm)	1 <sup>3</sup> / <sub>8</sub> " (34.9 mm)	1 <sup>3</sup> / <sub>8</sub> " (34.9 mm)
<b>Cross Tee</b> 4' (1219 mm)	1 <sup>3</sup> / <sub>8</sub> " (34.9 mm)	1 <sup>3</sup> / <sub>8</sub> " (34.9 mm)
<b>Cross Tee</b> 2' (609 mm)	1 <sup>3</sup> / <sub>8</sub> " (34.9 mm)	1 <sup>3</sup> / <sub>8</sub> " (34.9 mm)
<b>Wall Angle</b> 8' (2438 mm)	1 <sup>1</sup> / <sub>2</sub> " (38.1 mm)	1 <sup>1</sup> / <sub>2</sub> " (38.1 mm)

### Material Composition:

Pultruded fiberglass reinforced plastic

### Certifications:

Class A (1) Flame Spread of 5 per UL No 723, Smoke Development of 65. USDA and Agriculture Canada Accepted, International Code Council ESR-1722.

Future product developments may cause the data to change.

### Assembly Clips:

- Splice clip for joining runners and grid end supports
- Cross tee clip for assembling cross tees to system
- Lock clip
- Panel hold down clips
- Wall clip

### Material Composition:

Extruded, Grade 1, Type 2 virgin PVC, UL 94 V-O, USDA and Agriculture Canada Accepted

### Lay-In Panels:

- Class A (1) fiberglass reinforced plastic
- Class C fiberglass reinforced plastic
- Acoustical panels
- Gypsum board with fiberglass or plastic skins
- Laminated Panels

Panels should meet applicable codes.

## Architectural Specifications

### PART 1: GENERAL

#### 1.01 Related Work

- A. Ceiling lighting - See section (\_\_\_\_\_).
  - B. Air Handling unit penetrating the ceiling - See section (\_\_\_\_\_).
  - C. Lay-in panels or Ceiling Tiles - 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)

#### 1.02 Description

- A. 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. ICC Approved (ESR-1722 for full details)
  2. U.S.D.A. Accepted
  3. ASTM E-84 Flame spread rating of less than 15
  4. ASTM E-84 Smoke density rating of less than 200
  5. Class 1 (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 gauge Stainless Steel.  
Option: Hanging wire to be 12 gauge Monel.
  2. Wall angle fasteners to be the all plastic drive rivet.  
Option: Fasteners to be Stainless Steel, aluminum, or screws.
  3. Option: Fasten cross tee, lock and splice slips with one 1/8" diameter pop rivet or #6/32" screw (stainless steel/aluminum) on each side of the clip. The fastener is to be between the first and second rib on the Tee or 1/16" 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., Sun Prairie, Wisconsin 53590.
  2. Ceiling grid components
    - a. 12" (nominal) main runners, 4" (nominal), AND 2" (nominal) cross tees manufactured from pultruded fiberglass. 1 1/4" wide face minimum.
    - b. Pultruded fiberglass wall angles, 1 1/2" by 1 1/2", and 1/16" thick.
    - c. Wall clips at all Tree-to-wall intersections fastened.  
Option: Wall clips on two adjacent walls not anchored to the wall.
    - d. Cross tee clip and lock clip assembly system at main to cross tee and cross tee to cross tee intersection.  
Option: Fasten cross tee, lock and/or splice clips with corrosion resistant fasteners.
  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-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 jobsite 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

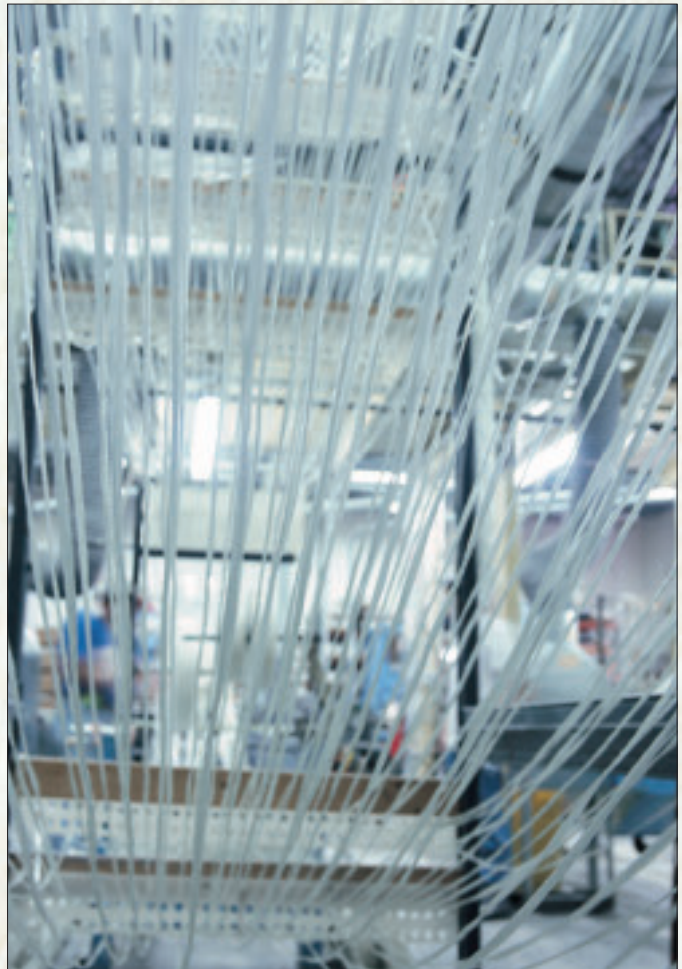
- A. Ceiling grid installer shall meet at the project site with the Architect and contractors from related trades working in the areas containing the suspended ceiling system prior to commencement and installation.
  1. Review areas of potential interference and resolve conflicts before proceeding with 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 1/4" x 46 7/8" for a 2x4 system; verify that any access door or penetration will function with this opening.)

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 tests 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.

## A commitment to quality in design and manufacturing



For further information, contact Keel Manufacturing, Inc., or call Sweet's BuyLine.



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