Industrial, commercial and architectural construction markets have relied on the flexibility and versatility of Unistrut Metal Framing Structural Ceiling Grids for years. Ceiling grids enable the conversion of otherwise unusable overhead space into flexible, valuable support space. Space that can be used for manufacturing tool support, catwalk support, ceiling support, lighting support, HVAC support or architectural design effects. The versatility of Unistrut Ceiling Grids allows attachments to be made anywhere along the channel opening without the time consuming fastening methods of welding and drilling.

Unistrut Construction’s ceiling grids are designed specifically to the customer’s requirements and can be designed to accommodate existing obstructions or site conditions. If desired, additional services such as specially painted grids, seismic* bracing, structural calculations or engineering seals can be provided.

* Contact our Union City, CA location regarding seismic installations & OSHPD requirements.

The support you need today, the flexibility you’ll want tomorrow.

Used extensively in industrial and commercial construction markets for over 60 years, Unistrut Metal Framing has set the standard for product design, quality and performance. The initial Unistrut concept—a simple spring nut and bolt connecting a fitting to a continuous slotted channel—has evolved into a comprehensive engineered grid system.

Insert the spring nut anywhere along the continuous slotted channel

Fittings can be placed anywhere along the channel opening for complete freedom of adjustment, without drilling
TYPICAL DETAILS

ONE LEVEL ONE WAY P1001 CEILING GRID

Upper structure is typical. Please contact your local Unistrut Construction Office for specific application design.

Threaded rod vertical support

Grid member

ONE LEVEL TWO WAY P1001 CEILING GRID

Upper structure is typical. Please contact your local Unistrut Construction Office for specific application design.

Threaded rod vertical support

Secondary grid members

Main grid members

Threaded rod vertical support

Main grid member

Secondary grid member

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TWO LEVEL TWO WAY P1001 CEILING GRID

Upper structure is typical. Please contact your local Unistrut Construction Office for specific application design.

General Notes: 1. This Unistrut support system is designed to support a maximum uniform load of _____ psf. 2. Area directly above the vertical support to be free and clear of all obstructions. 3. Existing structure to be checked by others. 4. All channel & fittings to have standard Unistrut “Perma-Grain” finish and all hardware to be electro-galvanized.  
* Design load varies based on maximum spans—Please contact your local Unistrut office for specific loading design.

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SECTION 05160
CEILING GRID SYSTEM

PART 1 - GENERAL
1.1 SCOPE OF WORK
a. Provide all Metal Framing material, fittings and related support system accessories as indicated on the drawings. Rails shall be true, plumb and level to the tolerances indicated when maximum loading conditions are applied due to equipment operation.
b. Provide all labor, supervision, engineering, and fabrication required for installation of the support system in accordance with the drawings and as specified herein.

1.2 REFERENCES
a. ASTM A 36 - Carbon Structural Steel.
b. ASTM A 1011 SS (Structural Steel) Grade 33.
c. ASTM A 572 - Steel Bars, Carbon, Merchant Quality, MA Grades.
d. ASTM A 570 - Steel Bars, Carbon, Hot-Wrought, Special Quality.
e. ASTM B 117 - Operating Salt Spray (Fog) Apparatus.
f. FED-STD 595 - Colors Used in Government Procurement.

1.3 DESIGN REQUIREMENTS
a. Support Structure: The support members shall be located as indicated on the drawings. The spacing shall be as shown on the drawings.
b. Ceiling Anchorage: Wherever possible, attachment to the ceiling structure above shall be by means of imbedded concrete inserts, through bolts, or by direct attachment to the structural framing of the building. Where possible, fasteners will not be in direct pull-out.
c. Vertical Supports: Vertical supports shall provide for both basic and minor vertical adjustments.
d. Seismic Bracing: Framing system shall be adequately braced to meet all code requirements.
e. Loading: The support structure shall be designed to support a uniform load of 250 psf.
f. Safety Factor: The system shall be designed with a minimum safety factor of 3 based upon ultimate strength under static loading conditions.

1.4 QUALITY ASSURANCE
a. Vendor Qualifications:
   1. The vendor shall not have had less than ten years experience in manufacturing and installing adjustable metal framing ceiling grid supports. The vendor shall demonstrate experience of projects of similar scope and size, and shall maintain continuing Quality Assurance Program for both its material and installation crews.
   2. The manufacturer must certify in writing that components supplied have been produced in accordance with an established quality assurance program.
   3. The vendor shall provide the single source responsibility for materials and workmanship, and shall provide a guarantee period of one year from date of acceptance by Architect/Owner.

b. Standard
   1. Work shall meet the requirements of the following standards:
   2. Structural Calculations and Shop Drawings:
      a. Submit structural calculations for approval by the project engineer. Calculations may include, but are not limited to:
         i. Design of tension members.
         ii. Stress and deflection analysis.
         iii. Selection of framing members, fittings, and accessories.
      b. Submit all pertinent manufacturer published data.

1.5 SUBMITTALS
a. Structural Calculations and Shop Drawings:
   1. Submit structural calculations for approval by the project engineer. Calculations may include, but are not limited to:
      a. Description of design criteria.
      b. Stress and deflection analysis.
      c. Selection of framing members, fittings, and accessories.
   b. Submit all pertinent manufacturer published data.

1.6 DELIVERY, STORAGE, AND HANDLING
a. All material is to be delivered to the work site in original factory packaging to avoid damage to the finish.
b. Upon delivery to the work site, all components shall be protected from the elements by a shelter or other covering.

1.7 SEQUENCING AND SCHEDULING
a. Coordinate with structural concrete trades for attachments and/or embeds.
b. Install system prior to extensive electrical, mechanical or HVAC work in area, and prior to room finishes.
c. Install system prior to ceiling installation. Coordinate with the ceiling contractor.
d. The vendor shall visit the job site and familiarize himself with all existing conditions.

PART 2 - PRODUCTS
2.1 ACCEPTABLE MANUFACTURER/VENDORS
a. Provide products of the following manufacturer or of an approved equal: Unistrut Corporation.
b. Installation to be done by Unistrut Construction or approved equivalent contractor.

2.2 MATERIALS
a. All channel members shall be fabricated from structural grade steel conforming to the following: ASTM A 1011 SS (Structural Steel) Grade 33.
b. All fittings shall be fabricated from steel conforming to one of the following: ASTM 570, ASTM A 576, or ASTM A 36.
c. All materials shall be stamped and identifiable by manufacturer and part number (where applicable). Materials that appear damaged, discolored, undetectable or rusted shall not be used and will not be accepted.

2.3 CONNECTIONS
a. Framing fittings shall be of 1/4-inch thick steel bar, 1-1/2 inch wide, with 9/16-inch holes to accommodate 1/2-inch threaded rod.
b. The standard Unistrut unit (1/2-inch) used for framing and attachments shall have serrated grooves to match and engage the internal channel edges.

2.4 FINISH
a. Channel:
   1. Rust inhibiting thermoset acrylic enamel paint applied by electro-deposition, after cleaning, phosphating, and thoroughly baked.
   2. Bump Finish: Polyester powder coat after cleaning, phosphating, and thoroughly baked.
   3. Color shall be PMA/Highway Green, Color tolerance Chart, PR Color No. 4.
   4. Bolts and Unistrut nuts shall be electro-galvanized.

b. Concrete Inserts: Continuous channel type inserts shall be fabricated to the same general specifications as the 12 gage channel members of the framing system and also shall have an ultimate resistance to pulling-out of the concrete of not less than 7,000 pounds average for 1-3/8-inch deep inserts and 6,000 pounds average for 11/8-inch deep inserts in each foot of length. Finish of inserts shall be prior to forming and zinc coated.

PART 3 - EXECUTION
3.1 EXAMINATION
a. The installer shall inspect the work area prior to installation. If work area conditions are unsatisfactory, installation shall not proceed until satisfactory corrections are completed.

3.2 INSTALLATION
a. Installation shall be accomplished by a fully trained installer authorized by the manufacturer, architect, general contractor or owner.
b. Set support system components into final position true to line, level and plumb, in accordance to approved shop drawings.
c. Anchor material firmly in place. Tighten all connections to their recommended torque.

2. The mounting surfaces of the support system shall be horizontal within the tolerance of 1/32 inch and within 1/16 inch in any 34 inch length of the rails.

3. The elevation of one rail mounting surface to the other shall be within 1/8 inch in any 24 inch length of the rails.

3.3 CLEANUP
a. Upon completion of the work of this section, remove all protective wraps and debris. Repair any damage due to installation.

3.4 PROTECTION
a. During installation, it shall be the responsibility of the installer to protect this work from damage.

b. Upon completion of the scope of work, it shall be the responsibility of the general contractor to protect this work from damage during the remainder of construction on the project and until substantial completion.

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