

# Atkore - UNISTRUT®

This product specification is written according to the Construction Specifications Institute *MasterFormat*, 2018 Update.

## SECTION 23 05 29

### Hangers and Supports for HVAC Piping and Equipment

#### PART I – GENERAL

##### 1.01 SUMMARY

- A. Framing shall be a strut type metal framing system (Strut System)
- B. Strut System shall be used:
  - 1. To support mechanical and electrical equipment and devices.
  - 2. For structural applications as applicable.
- C. Strut System and components must be supplied from a single approved Manufacturer.

##### 1.02 QUALITY ASSURANCE

- A. Manufacturer's qualifications:
  - 1. The manufacturer shall have at least 10 years' experience in manufacturing Strut Systems.
  - 2. The manufacturer must certify in writing all components supplied have been produced in accordance with an established quality assurance program.
- B. Work shall meet the requirements of the following standards:
  - 1. Federal, State and Local codes
  - 2. American Iron and Steel Institute (AISI) Specification for the Design of Cold-Formed Steel Structural Members 2001 Edition
  - 3. American Society for Testing and Materials (ASTM)
  - 4. Metal Framing Manufacturer's Association (MFMA)

##### 1.03 SUBMITTALS

- A. Structural calculations by a Registered Professional or Structural Engineer in the State of the Project's location for approval by the Professional of Record. Calculations may include, but are not limited to:
  - 1. Description of design criteria
  - 2. Stress and deflection analysis
  - 3. Selection of framing members, fittings, and accessories
- B. Assembly drawings necessary to install the Strut System in compliance with the Contract Drawings
- C. Pertinent manufacturers published data

#### 1.04 PRODUCT 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.

#### 1.05 WARRANTY

- A. Manufacturer shall warrant for 1 year from the shipment date that products will be free from defects in material or manufacture. In the event of any such defect in violation of the warranty, Manufacturer shall have the option to repair or replace any such defective product.
- B. Installer shall warrant for 1 year from the date of completion of work that the work will be free of defects in installation. In the event of any such defect in violation of the warranty, Installer shall have the option to repair or replace any such defective product.

### PART 2 - PRODUCTS

#### 2.01 ACCEPTABLE MANUFACTURERS

- A. Strut System and components shall be
  - 1. Atkore UNISTRUT®  
16100 South Lathrop Avenue  
Harvey, IL 60426  
TOLL-FREE / 800-882-5543  
Local / (708) 339-1610

#### 2.02 MATERIALS

- A. All channel members shall be fabricated conforming to one of the following ASTM specifications:
  - 1. Plain Carbon Steel: ASTM 1011 SS Grade 33
  - 2. Pre-Galvanized Carbon Steel: A 653 Grade 33
  - 3. Unistrut Defender™: ASTM 1046 SS Grade 33
  - 4. Stainless Steel: A 240 (Type 304)
  - 5. Aluminum: B 221 (Type 6063-T6)
- B. All fittings shall be fabricated conforming to one of the following ASTM specifications:
  - 1. Carbon Steel: All carbon steel fittings shall be fabricated from steel that meets/exceeds the physical requirements of ASTM A1011 SS Grade 33 and conforms to one of the following ASTM specifications:
    - a. ASTM 575
    - b. ASTM 576
    - c. ASTM 36
    - d. ASTM 635
    - e. ASTM1059
    - f. ASTM 1046

2. Stainless Steel:
  - a. ASTM 240 (Type 304 or Type 316)
  - b. ASTM 276 (Type 304 or Type 316)
3. Aluminum:
  - a. B 209 (Type 1100F or Type 5052-H32)
- C. Any substitutions of product or manufacturer must be approved in writing ten days prior to bid date by the Professional of Record.

## 2.03 FINISHES

- A. FACTORY PAINTED
  1. Channel
    - a. Rust inhibiting thermoset acrylic enamel paint applied by electro-deposition after cleaning and phosphating, and thoroughly baked.
  2. Fittings
    - a. Polyester powder coat after cleaning and phosphating, and thoroughly baked.
  3. Color shall be FHWA Highway Green, Color Tolerance Chart, PR Color No. 4
  4. Hardness = 2H
  5. Performance
    - a. Salt Spray per ASTM B117
      - (1) Scribed: Exceed 400 hours
      - (2) Unscribed: Exceed 600 hours
    - b. Nominal chalking at 1,000 hours per weatherometer G-23 test
    - c. No checking at 1,000 hours per weatherometer G-23 test
- B. ELECTRO-GALVANIZED per ASTM B 633 Type III SC 1
- C. PRE-GALVANIZED per ASTM A653
  1. Zinc coated by hot-dipped process prior to roll forming at the steel mill
  2. Zinc coating thickness shall be G90 (0.75 mil = 0.45 oz./ sq. ft. surface area)
- D. HOT-DIPPED GALVANIZED per ASTM A123 or A153
  1. Zinc coated after all manufacturing operations are complete
  2. Zinc coating thickness shall be G65 (2.6 mils = 1.50 oz./ sq. ft. surface area)
- E. UNISTRUT DEFENDER™ per ASTM A1046 and A1059
  1. Strut coated per A1046 to a mass of 0.45 oz./ sq. ft. surface area
  2. Fittings coated per A1059 to a thickness of 30 microns and/or A1046 to a mass of 0.45 oz./sq. ft. surface area
- F. SPECIAL COATING / MATERIAL  
(Describe as applicable)

## PART 3 - EXECUTION

### 3.01 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.

### 3.02 INSTALLATION

- A. Installation shall be accomplished by a fully trained manufacturer authorized installer.
- B. Set Strut System components into final position true to line, level and plumb, in accordance with approved drawings.
- C. Anchor material firmly in place and tighten all connections to their recommended torques.

### 3.03 CLEANUP

- A. Upon completion of this section of work, remove all protective wraps and debris. Repair any damage due to installation of this section of work.

### 3.04 PROTECTION

- A. During installation, it shall be the responsibility of the installer to protect this work from damage.
- B. Upon completion of this scope of work, it shall become the responsibility of the general contractor to protect this work from damage during the remainder of construction on the project and until substantial completion.