

SPUNSTRAND SUPPORTS PRODUCT SPECIFICATIONS

SECTION - MECHANICAL SUPPORTS

PART 1 GENERAL

This specification has been compiled from generally accepted engineering principles and standards from American National Standards Institute (ANSI), Sheet Metal Air Conditioning National Association (SMACNA), Manufacturers Standardization Society (MSS), Factory Mutual (FM), Underwriters Laboratories (UL*) and other pertinent documents. The manufacturer shall be: Spunstrand Support Structures or pre-approved equal. Pre-approved equal must show examples of previous installs for both above and below grade including stamped calculations for verification.

PART 2 DESIGN and MANUFACTURE

1. Standards

All duct/pipe/equipment hangers and supports are made of assembled prefabricated components and manufactured to comply with the latest referenced standards.

- A. ANSI / ASME Code for Pressure Piping.
- B. ANSI / SMACNA
 - 1. Duct Construction Standards - Metal and Flexible, 2006
 - 2. Rectangular Industrial Duct Standards, 2004.
 - 3. Accepted Industry Practice for Industrial Duct Construction, 2008.
 - 4. HVAC Air Duct Leakage Test Manual 2nd Edition, 2012.
- C. SMACNA
 - 1. Thermoset FRP Duct Construction Manual, 1997.
 - 2. Thermoplastic Duct (PVC) Construction Manual, 1995.
 - 3. Seismic Restraint Manual OSHPD Edition, 2009. All stabilizers shall be prefabricated with adjustable mounts.
- D. All duct/pipe/equipment supports to surround all duct/pipe/equipment components for its full perimeter at all supporting points. The duct/pipes equipment shall be void of any partial point loaded support configuration and shall maintain a full 360° duct to support contact.
- E. All duct/pipe/equipment supports to be consistent in design, materials, fabrication, assembly, and installation void of all field-fabricated supports.
- F. The duct/pipe/equipment support system to be flexible to accommodate multiple and/or stacked pipe/duct/equipment runs using prefabricated components and vertically adjustable.

2. Materials

Appropriate materials and protective coatings shall be used to prevent failure from environmental and galvanic corrosion. Materials that come in contact with the duct/pipe shall be compatible so that neither has deteriorating effect on each other. Duct and pipe hanger supports are to be manufactured from materials as specified by the design engineer and in accordance with industry standards as outlined:

- A. ASTM A653 G90 Steel Sheet Zinc Coated (galvanized).
- B. ASTM A480 Stainless Steel Plate.
- C. ASTM B209-10 Aluminum Plate, Powder Coated.
- D. ASTM B633 - Specification for Electro-deposited Coatings of Zinc, Iron and Steel.
- E. All supports are assembled from prefabricated components with adjustable mounts.

3. Welding

Comply with AWS D1.1/D1.1M procedures for shielded, metal arc welding; appearance and quality of welds. Using materials and methods that minimize distortion and develop strength and corrosion resistance of base metals. Exposed welds are finished so no roughness shows, and the contours of the welded surfaces match adjacent contours.

4. Equipment Supports

Equipment supports are designed to accommodate size, shape and weight. These assemblies are fabricated from various materials such as Mild steel, aluminum and stainless steel. A variety of designs allows for suspension, roof/floor mountings, seismic bracing and isolation requirements.

5. Non-metallic Coatings

Neoprene, teflon, Polyurethane and Epoxy

6. Neoprene Abrasion Shields

For duct/pipe/equipment that is subject to scratching.

PART 3 LOAD CALCULATIONS

1. Hanger / Support Loads

Hangers and supports must be selected to withstand all static and dynamic loading conditions of the supported system and points of attachment to the structure based on Roark's Saddle Formula of Formulas for Stress and Strain, 5th edition.

2. Hanger / Support Spacing

All hangers and supports shall comply with published guidelines and recommendations outlined in ANSI/ASME, ANSI/SMACNA and all applicable federal, state and local codes.

3. Under-slab / Below Grade

If it is known at the time of design that soil conditions at the job site are suitable for the support of underground ducting and piping, or if no information is available as to the soil conditions, all ducting and piping shall be supported as specified under maximum hanger and support spacing MSS SP-69, 1991, and in accordance with SMACNA standards at the time of production.

PART 4 INSTALLATION

1. Duct / Pipe / Equipment Supports

All duct and pipe supports shall be assembled and installed by a qualified HVAC / Piping contractor in accordance with;

A. ANSI / ASME Code for Pressure Piping.

B. ANSI / SMACNA

1. Duct Construction Standards - Metal and Flexible, 2006.

2. Rectangular Industrial Duct Standards, 2004.

3. Accepted Industry Practice for Industrial Duct Construction, 2008.

4. HVAC Air Duct Leakage Test Manual 2nd Edition, 2012.

C. SMACNA

1. Thermoset FRP Duct Construction Manual, 1997.

2. Thermoplastic Duct (PVC) Construction Manual, 1995.

3. Seismic Restraint Manual OSHPD Edition, 2009.

D. Installations shall be void of all screw fasteners and any penetrations of any kind into the duct/pipe/equipment.

E. All duct/pipe/equipment supports shall be a proprietary system of all prefabricated components. No field fabrication, cutting, or bending will be allowed.

F. All duct/pipe/equipment supports shall have the ability to field-adjust the elevations to allow for specified slopes along length of duct/pipe/conduit runs.

G. Engineer shall be responsible to provide the correct design conditions for seismic and wind load requirements. Manufacture shall provide calcs to verify these conditions are met.