

SECTION 07720
ROOFTOP SUPPORT SYSTEMS
(Applicable to Section 15060 (Mechanical), Section 15700 (HVAC),
Section 15820 (Duct Accessories) and Section 16070 (Electrical))

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. The work covered by this specification consists of furnishing all labor, equipment, materials and accessories, and performing all operations required for the correct installation of rooftop pipe supports, walkways, crossovers, stairs and platforms.

1.02 REFERENCES

- A. ASTM A653 G90 SS Gr. 33 - Specification for Steel Sheet, Zinc Coated (Galvanized) by the Hot Dipped Process
- B. ASTM B633 - Specification for Electrodeposited Coatings of Zinc on Iron and Steel
- C. ASTM A 123/A 123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
- D. ASTM A 153/A 153M - Standard Specification for Zinc Coating (Hot-Dip Galvanized) on Iron and Steel Hardware
- E. ASTM D 1929 - Standard Test Method for Determining Ignition Temperature of Plastics
- F. MSS SP-58 - Pipe Hangers and Supports -- Materials, Design and Manufacture; Manufacturers Standardization Society of the Valve and Fittings Industry
- G. MSS SP-69 - Pipe Hangers and Supports -- Selection and Application; Manufacturers Standardization Society of the Valve and Fittings Industry

1.03 QUALITY ASSURANCE

- A. Pipe supports, walkway and crossover systems shall be manufactured under a quality control program assuring quality product delivered to the jobsite. Support systems that are damaged shall not be installed.
- B. Manufacturer Qualifications: must be a company specializing in manufacturing roof top pipe support systems and rooftop walkway systems with a minimum of 20 years of documented experience

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- C. Workmanship: All supports to be installed by a qualified contractor and installed in accordance with manufacturer's recommendations.
 - 1. All work shall comply with all applicable federal, state, and local codes and laws having jurisdiction.
 - 2. All work shall conform to accepted industry and trade standards for pipe Support installations.

1.04 SUBMITTALS

- A. Submit under provisions of section 01300
- B. Drawings: Will show dimensions of product
- C. Layout: Will show overview of layout, spacing and details of installation
- D. Alternate to specified product must be submitted 7 days before bid date for approval.

1.05 WARRANTY

- A. Warranty: PHP Systems/Design guarantees to repair or replace at our option any products we find in our sole discretion to be structurally defective in material or workmanship for a period of five (5) years from date of delivery to purchaser. Such warranty specifically excludes repair of non-structural rust damage to products. Our obligation with respect to material found by us to be defective shall be limited to replacement or repair and in no event shall we be liable for transportation to or from our factory, installation, adjustments or any expenses or damages arising in connection with such material. PHP Systems/Design i.e. Portable Pipe Hangers accepts no liability for products not designed and laid out by PHP or for any alteration or modification to the system not authorized by PHP. No warranty expressed or implied shall cover defects caused by outside contractors/installers of the PHP System.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Manufacturer: Subject to compliance with these specifications, support systems shall be PHP Systems design as supplied by PHP Systems/Design 5534 Harvey Wilson DR, Houston, TX 77020 Tel: 713-672-5088 email: info@phpsd.com website: www.phpsd.com.

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2.02 MATERIALS

- A. Bases are high density polypropylene with UV inhibitors and anti-oxidants conforming to following:
1. Color: Black color as molded
 2. Moisture Content: negligible
 3. Shrinking/Swelling due to moisture: Negligible
 4. Resistant to oil, gasoline, antifreeze, battery acid and sulfuric acid
 5. Do not use bases that are made of pressed rubber, steel, stainless steel, recycled tires or carbonated plastics
 - i. Base Dimensions:
 1. 18-inches wide by 18-inches long by 3-inches tall(18x18)
 2. 12-inches wide by 12-inches long by 3-inches tall(12x12)
 3. 10-inches wide by 16-inches long by 3-inches tall(PP10)
 4. 8-inches wide by 10-inches long by 2.5-inches tall(SS8)
 5. 18-inches round by 3-inches tall(18 round)
- B. Steel frame: Steel, 12ga 1-5/8" or 1-7/8" strut galvanized per ASTM A123 or 14ga 13/16" strut galvanized per ASTM A653 for PP10 and SS8.
- C. Hanger Type:
1. Conforms to MSS SP-58 and MSS SP-69
 2. Material: Carbon steel(Standard); 304 SS available
 3. Clevis Hanger: Used for all insulated and uninsulated lines
 4. Roller Hanger: Used for uninsulated lines
 5. Finish: HDG
- D. Walkway Surface
1. Interlocking Planking:
 - a. Thickness: 18 gauge
 - b. Section width: 12 inches(305 mm) standard, or 6 inches(152 mm)
 - c. Planking height: 2.5 inches
 - d. Flange options: MM/MF
 - e. Surface: Slip resistant
 - f. Finish: HDG
 2. Bar Grating: Type WB-4
 - a. 1" x 3/16" Bearing Bars, 1-3/16" on Center, Regular Cross Bars 4"
 - b. Width: 24 inches(standard), or 36 inches – as required
 - c. Surface: Serrated
 - d. Finish: HDG

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- E. Handrail
 - 1. 12 gauge, 1-5/8" strut, Galvanized
- D. Attaching hardware: HDG threaded rod, nuts and attaching hardware per ASTM A153.

2.03 TYPE OF ROOFTOP SUPPORTS

- A. PSE-Custom/PS - model is designed to support hydronic, refrigerant, steam or gas pipes at most any specified height above the roof surface. The frame supports the pipe from above using hanger.
 - 1. Support Spacing subject to local codes and authorities but will not exceed 10 feet
 - 2. Bracing required when using base with swivel, when pipe exceeds 24 inches above roof, or when thermal expansion of pipe is great
- B. PSL - model is designed to support multiple hydronic, refrigerant, steam or gas pipes at most any specified height above the roof surface. The frame supports the pipe from below using the cross bar.
 - 1. Support Spacing subject to local codes and authorities but will not exceed 10 feet
 - 2. Bracing required when using base with swivel, when pipe exceeds 24 inches above roof, or when thermal expansion of pipe is great
- C. PP10 w/Roller - is designed to support gas pipe up to 3 1/2" OD with a standard height of up to 12" above the roof surface.
- D. PP10 w/Strut - is designed to support (electrical) conduit lines, condensation drain lines or small refrigeration lines up to 3 1/2" OD with a standard height of up to 12" above the roof surface.
- E. SS8 w/ Roller - model is designed to support gas pipe up to 2 1/2" OD and not exceeding 10" in height above the roof surface
- F. SS8 w/ Strut - model is designed to support electrical conduit, condensate drain lines or small refrigeration lines up to 2 1/2" OD and not exceeding 10" in height above the roof surface
- G. PHP Duct Support(Goal Post/Enclosed) - model is designed to support any size of square or round duct at most any specified height above the roof surface.
 - 1. Support Spacing subject to local codes and authorities but will not exceed 10 feet
 - 2. Bracing required when using base with swivel, when duct exceeds 24 inches above roof.

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- H. Elevated Walkway/Crossover/Stair/Access Platform – used to enhance safety and flow of rooftop traffic. All walkway systems are installed directly on the roof without penetrating the roof surface. Systems allow technicians and service professionals to gain safe and convenient access to varying roof levels and equipment otherwise encumbered by rooftop pipes, ducts, and other types of rooftop components.
- I. PHP Equipment Platform - is designed to support various types of rooftop equipment.
- J. Seismic and High wind applications are available for all categories listed above

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install in accordance with manufacturer's instructions and recommendations.
- B. If gravel top roof, gravel must be removed around and under support base.
- F. Always consult roofing manufacturer for roof membrane compression capacities. If necessary, a compatible sheet of roofing material (rubber pad) may be installed under rooftop support to disperse concentrated loads and add further membrane protection.
- G. Pipe spacing subject to local authorities and codes but will not exceed 10 feet.

END OF SECTION