



NON-PENETRATING ROOFTOP SUPPORTS AND WALKWAYS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Portable, non-penetrating, rooftop support system for:
 - 1. Piping.
 - 2. Ducts.
 - 3. Conduits and cables.
 - 4. HVAC equipment.
 - 5. Plumbing equipment.
 - 6. Telecommunications equipment.
 - 7. Industrial process equipment.
 - 8. Walkways, Crossovers & Platform Systems.
 - 9. Seismic and High Wind application for items 1 thru 8 listed above.
 - 10. _____.

- B. Portable rooftop walkway and platform system.

1.2 RELATED SECTIONS

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- A. Section 07 71 00 - Roof Specialties.
- B. Section 07 72 00 - Roof Accessories.
- C. Section 07 72 46 - Roof Walkways.
- D. Section 22 00 00 - Plumbing.
 - 1. 22 05 29 - Hangers & Supports for Plumbing, Piping & Equipment
 - 2. 22 05 48 - Vibration & Seismic Controls Plumbing, Piping & Equipment
- E. Section 23 00 00 – Heating, Ventilating & Air Conditioning (HVAC).
 - 1. 23 05 29 - Hangers & Supports for HVAC.
 - 2. 23 05 48 - Vibration & Seismic Controls for HVAC Piping & Equipment.
- F. Section 22 33 00 – Air Duct Accessories.
- G. Section 26 00 00 - Electrical.
- H. Section 27 00 00 - Communications.



1.3 REFERENCES

- A. ASTM A 123/A - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
- B. ASTM A 653 - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
- C. MSS SP-58 - Pipe Hangers and Supports -- Materials, Design and Manufacturer; Manufacturers Standardization Society of the Valve and Fittings Industry.
- D. MSS SP-69 - Pipe Hangers and Supports -- Selection and Application; Manufacturers Standardization Society of the Valve and Fittings Industry.

1.4 SYSTEM DESCRIPTION

- A. Support piping on roof with an engineered prefabricated Rooftop Support System designed for installation without roof penetration, flashing or damage to the roofing material where possible. The system shall consist of bases, made of recycled rubber, a galvanized steel frame and suitable pipe hangers for the application. The system shall be designed to not exceed 2 psi at each base. Nuts, threaded rods and washers shall be galvanized, channel nuts and bolts for spring nuts will be electro-plated. System shall be custom designed to fit piping and conduit to be installed. Pipe supports shall be manufactured by Rooftop Support Systems.
- B. Support ductwork on roof with an engineered prefabricated Rooftop Support Systems Duct System designed for installation without roof penetrations, flashing or damage to the roofing material where possible. The system shall consist of bases, made of recycled rubber, and a galvanized steel frame. The system shall be designed to not exceed 2 psi at each base. Nuts, threaded rods, washers, channel nuts, and bolts will be electro-plated. System shall be custom designed to fit job requirements. Duct supports shall be manufactured by Rooftop Support Systems.
- C. Support elevated walkway systems routed across the roof with an engineered prefabricated Rooftop Support Systems Walkway System designed for installation without roof penetrations, flashing, or damage to the roofing material where possible. The system shall consist of bases, made of recycled rubber, a galvanized structural steel frame, walkway planking, and handrail if required. Nuts, threaded rods, washers, spring nuts, and bolts will be electro-plated. System shall be custom designed to fit the job requirements, but not to exceed 2 psi per at each base. Walkway Systems shall be manufactured by Rooftop Support Systems.
- D. Rooftop Support Systems Telecommunication Platform System on the roof with an engineered prefabricated Rooftop Support Systems System designed for installation without roof penetration, flashing or damage to the roofing material where possible. The system shall be designed to support all weight as required, but not to exceed 2 psi per at each base. The system shall consist of bases, made of recycled rubber, galvanized substructures, plank grating and handrails if required. Nuts, threaded rods, washers, spring nuts, and bolts will be electro-plated. Telecommunication Platform Systems shall be manufactured by Rooftop Support Systems.
- E. Seismic and High Wind applications are available for all categories listed above.



1.5 SUBMITTALS

- A. Product Data: Submit for all products proposed for use, describing physical characteristics and method of installation.
- B. Shop Drawings: Show installation layout, sizes of units, and details of installation.
- C. Verification Samples: Actual samples of bases, each type of support, hanger, and fasteners, and not less than 12 inches of framing members.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing support systems, with a minimum of eight years of documented experience.
- B. Installer Qualifications: Company with not less than five years of experience in installation of piping support systems.
- C. References: Submit list of references comprising not less than 10 installations that have been in use for a minimum of five years. Include contact name and phone numbers for each reference.
- D. Pre-Installation Meeting: After approval of submittals, but before beginning installation, conduct a meeting at the project site attended by Architect, Contractor, installers of roofing, and mechanical and electrical piping, to be installed on pipe support systems.
 - i. Purpose of meeting is to describe in detail the installation process and to establish agreement, coordination, and responsibilities.
 - ii. Prepare detailed meeting report and distribute copies to the Architect and all attendees.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver all materials to project site in manufacturer's original packaging, marked with manufacturer's name, and other related information.
- B. Store materials under cover until needed for installation.

1.6 WARRANTY

- A. Warranty: Rooftop Support Systems 10-year limited warranty on pregalvanized and 20-year limited warranty on HDG to repair or replace, at our option, any products we find to be structurally defective in material or workmanship. Warranty is not valid if System was modified, installed incorrectly, or not designed by Rooftop Support Systems.
- B. Terms and Conditions (View/Download)



PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00.

2.2 APPLICATIONS

- A. Support pipes, conduit, cable trays, and ducts minimum of 6 inches above roof surface.
1. Support Spacing: ____ feet. 8 feet MAXIMUM.
 2. For Electrical and Gas Lines 3-1/2 inches in Diameter or less, up to 16 inches above roof: Model RTSPUC
 3. For single Electrical and Gas Lines 4 to 8 inches in Diameter: Model: RTSH
 4. For Multiple Lines: Model RTSPUC or RTSH.
 5. For Ductwork: Model RTSH-single cross brace.
 6. For Ductwork: Model RTSH-D – Double Cross brace.
 7. Accessories for Custom and Other Applications when required:
 - a. On Sloped Roof Surfaces, Where Slope Exceeds 1/4 inch per foot: Rooftop Support Systems is not approved for use.
 - b. Un-insulated Piping: Roller support or clevis hanger.
 - c. Insulated Piping: Band hanger supported from horizontal channel or clevis hanger with pipe saddle.
- B. Walkway, Crossover & Equipment Platform Access: Elevated walkway systems shall be manufactured by Rooftop Support Systems.
1. Support Spacing: ____ feet.
 2. Bases Recycled Rubber
 3. Substructure: 12-gauge back-to-back channel P1001, or approved equal supported directly from the bases.
 4. Grating: Mill-galvanized carbon steel in accordance with ASTM A525:
 - a. Gauge 12-ga. steel.
 - b. Section Width: 11-3/4 inches (standard),
 - c. Section Width: 9-1/2 inches.
 - d. Section Height: 1-1/2 inch.
 - e. Surface Condition: Serrated Anti-Slip
 5. Handrail: 12-gauge, 1-5/8 inch channel P1000, or approved equal.
 6. All substructures and handrails shall be galvanized steel. Channel nuts and bolts will be electro-plated.
- C. Attachment of Base to Roof Surface when required for Seismic and High Wind Application:
1. No attachment to roof surface.
 2. Mechanically fastened to roof deck.



2.3 MATERIALS

- A. Rooftop Support System: Engineered, portable system specifically designed for installation without the need for roof penetrations or flashings, and without causing damage to the roofing membrane where possible.
1. Design system using recycled rubber, and steel framing for support is 1-5/8 inch P1000H3
 2. Custom design system to fit piping, conduits, equipment, or walkways to be installed and actual conditions of service and loading.
 3. Piping Supports: Provide suitable hangers and supports.
 4. Duct and Equipment Supports: Factory fabricated to support exact duct sizes and equipment to be installed.
 5. Walkways and Platforms: Provide galvanized slotted metal grating, in configurations as indicated, and tubular handrails where indicated.
- B. Bases: compression molded recycled rubber, conforming to the following:
1. Moisture Content: Negligible.
 2. Shrinkage/Swelling Due to Moisture: Negligible.
 3. Insect Resistance: No known insect damage potential.
 4. Chemical Resistance (oil, brake fluid, gasoline, diesel, antifreeze, battery acid, and sulfuric acid) No visual or physical change apparent.
 5. Sized as required by loading conditions and as indicated on the drawings.
 6. Shop fabricated with inserts for square tubing or threaded rods as required.
 7. Color: Integral black color as molded.
 8. Bases for Mechanical Attachment: Solid Steel
- C. Stainless Steel Framing:
1. Channel Types: 1-5/8 inch, or as required for loading conditions.
 2. Thickness: 12 gauge.
 3. Form: Roll-formed 3-sided or tubular channel.
 4. Finish: Mill finish.
 5. Do not use tubing or tube steel.
- D. Pipe Supports and Hangers: Conform to MSS SP-58 and MSS SP-69 and as follows:
1. Fabricate of carbon steel where framing is carbon steel; fabricate of stainless steel where framing is stainless steel; finished same as framing.
 2. Sizes 2-1/2 inch and smaller: Single roller supports for piping subject to expansion and contraction; 3-sided channels and pipe clamps.
 3. Sizes 3 inch and larger: Rollers, clevis hangers, or band hangers, to allow for expansion and contraction without movement of the bases or framing.
- E. Accessories: Clamps, bolts, nuts, washers, and other devices as required for a complete system.
1. Carbon Steel: Pregalvanized in accordance with ASTM A653
 2. Carbon Steel: Hot-dip galvanized in accordance with ASTM A123.
 3. Stainless Steel: Mill finish.
 4. For Mechanical Fastening to Deck: On wood and steel decks, use bolts with steel plate to attach to deck; on concrete decks use anchors that adhere to loading requirements.



PART 3 EXECUTION

3.1 EXAMINATION

- F. Verify that roofing system is complete and that roof surfaces are smooth, flat, and ready to receive work of this section.

3.2 PREPARATION

- A. Clean surfaces of roof in areas to receive support bases.
 - 1. Sweep loose gravel from gravel surfaced roofs.
 - 2. Remove dirt, dust, oils, and other foreign materials.
- B. Use care in handling support system components during installation, to avoid damage to roofing, flashing, equipment, or related materials.

3.3 INSTALLATION

- A. Pipe, Duct, Cable, and Equipment Support Systems:
 - 1. Locate bases and support framing as indicated on drawings and as specified herein. Provide complete and adequate support of all piping, ducts, and conduit, whether or not all required devices are shown.
 - 2. The use of wood for supporting piping is not permitted.
 - 3. Provide supports spaced so deflection of piping does not exceed 1/240 of span.
 - 4. Install framing at spacing indicated, but in no case at greater than 8 feet on center
 - 5. Accurately locate and align bases.
 - a. Consult manufacturer of existing or new roofing system as to the type of isolation pads required between the roof and base.
 - b. Set isolation pads in adhesive if required by manufacturer's instructions.
 - c. Place bases on isolation pads.
 - d. Adhere or mechanically attach if required by code.
 - e. Where applicable, replace gravel around bases.
 - 6. Set framing posts into bases and assemble framing structure as indicated.
 - 8. Use galvanized fasteners for galvanized framing and stainless steel fasteners for stainless steel framing.
- B. Duct Support Systems
 - 1. Locate bases and support framing as indicated on drawings and as specified herein. Provide complete and adequate support of all piping, ducts, and conduit, whether or not all required devices are shown.
 - 2. Accurately locate and align bases.
 - a. Place bases on roof membrane.
 - b. Place or mechanically attach if required by code.
 - c. Where applicable, replace gravel around bases.
 - 7. Place pre-assembled support on bases and attach framing post to base bracket with 3/8 inch bolts provided and adjust as needed. Support shall be adjustable to maintain existing elevation and slope.
 - 8. Use galvanized fasteners for galvanized framing and stainless-steel fasteners for stainless-steel framing.



- C. Walkway, Crossover & Equipment Platform Access:
1. Install substructures at spacing indicated, but not greater than 5 feet on center.
 2. Locate bases and support framing as indicated on drawings and as specified herein. Provide complete and adequate support of all structures.
 3. Accurately locate and align bases.
 - a. Consult manufacturer of existing or new roofing system as to the type of isolation pads required between the roof and base
 - b. Place or mechanically attach if required by code.
 - c. Where applicable, replace gravel around bases.
 4. Set legs of substructures into bases as indicated.
 5. Use galvanized fasteners for galvanized framing and stainless steel fasteners for stainless steel framing.
 6. Layout and fasten planking to substructures.
 7. Where handrails are required, install as follows:
 - d. Install intermediate rails without tightening.
 - e. Make minor adjustments as needed, such as spacing of substructures to accommodate intermediate handrails, and install hold-downs.
 - c. Secure intermediate handrails and install top handrails.

3.4 FIELD QUALITY CONTROL

- A. When requested by the Architect, provide a factory-trained representative of the manufacturer to visit the site while the work is in progress to assure that the installation conforms to the design requirements and the manufacturer's installation requirements.

1.2 CLEANING AND PROTECTION

- A. Remove all packaging, unused fasteners, and other installation materials from the project site.
- B. Provide protection as required to leave the work area in undamaged condition at the time of completion of work.

END OF SECTION