

University of Houston Master Specification

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<Insert U of H Proj #>

<Insert Issue Name>
<Insert Issue Date>

SECTION 22 6000 - COMPRESSED AIR PIPING

Maintain Section format, including the UH master spec designation and version date in bold in the center columns of the header and footer. Complete the header and footer with Project information.

Edit and finalize this Section, where prompted by Editor's notes, to suit Project specific requirements. Make selections for the Project at text identified in **bold**.

Verify that Section titles referenced in this Section are correct for this Project's Specifications; Section titles may have changed.

Delete hidden text after this Section has been edited for the Project.

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section
- B. The Contractor's attention is specifically directed, but not limited, to the following documents for additional requirements:
 - 1. The current version of the *Uniform General Conditions for Construction Contracts*, State of Texas, available on the web site of the Texas Facilities Commission.
 - 2. The University of Houston's *Supplemental General Conditions and special Conditions for Construction*.

1.2 SCOPE OF WORK

- A. Work Included: Provide all labor, materials, equipment, tools and services, and perform all operations required in connection with or properly incidental to the construction of a complete compressed air system to serve equipment and air outlets as indicated on the Drawings, and as required for a complete and functional system.

1.3 QUALITY ASSURANCE

- A. Acceptable Manufacturers: Provide products complying with these specifications and produced by one of the following:
 - 1. Galvanized Steel Pipe: Provide pipe manufactured by one of the manufacturers listed in the latest edition of the American Petroleum Institute (API) approved manufacturer listing.
 - 2. Foreign pipe, if any, shall be clearly indicated on the pipe submittal and shall include documentation of compliance with applicable ASTM and ANSI standards.

1.4 SUBMITTALS

- A. Shop Drawing submittals shall include, but not be limited to, the following:

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1. Cut sheets of compressed air pipe, valves, fittings and other required accessories clearly indicating all features, options, materials and dimensions.
2. Additional information as required in Section 23 0100 "Mechanical General Provisions."

1.5 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Deliver compressed air piping system components in factory-fabricated water-resistant wrapping.
- B. Handle compressed air piping system components carefully to avoid damage to material component, enclosure and finish.
- C. Store compressed air piping system components in a clean, dry space and protect from the weather.

PART 2 - PRODUCTS

2.1 COMPRESSED AIR PIPE AND FITTINGS

- A. Piping: All compressed air piping above grade shall be Schedule 40 galvanized steel pipe conforming to ASTM A-120 and ANSI B36.20. Underground air piping shall be Type 'K' soft drawn copper and shall not have any fittings installed in concealed locations. Protect piping as specified in Section 22 0000 "Plumbing Piping Systems" for underground domestic water piping.
- B. Fittings: Piping 2 inches and smaller shall be joined using Class 150 galvanized threaded fittings (ANSI B16.3). Use thread sealing tape in all threaded connections. Copper pipe fittings shall be wrought copper brazed end fittings assembled using 95/5 tin-antimony or tin-silver solder.

2.2 VALVES AND TRIM

- A. Ball Valves:
 1. Ball valves shall be two-piece, full line size (full port) **[chromium plated brass] [316 stainless steel]** balls **[and stems] [, brass stems]** and reinforced seats and stuffing box rings. All ball valves shall be designed to permit repacking while valve is in line. Valves shall be furnished with blowout proof stems.
 2. Ball valves 2 inches and smaller shall be threaded body bronze or brass valves of a **[full] [standard]** port design. Valves shall be rated for 300 psi WOG and shall conform to Federal Specification WW-V-35B. Valves shall be:
 - a. Apollo No. 77-100 Series **[standard port]**.
 - b. Crane No. 9032 Series **[standard port]**.
 - c. Nibco No. T-585 Series **[full port]**.
 - d. Red and White No. 5044 Series **[full port]**.
 - e. Stockham No. S-216-BR-R-T **[standard port]**.
 - f. Victaulic Style 722 **[standard port]**.
- B. Quick Connect Outlets: Provide brass quick connect fittings and ball valves at all air outlet locations. Provide a matching hose side quick connect fitting at each air outlet.

2.3 HANGERS AND SUPPORTS

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- A. General: Refer to Section 23 0300 "Basic Materials and Methods" and Section 22 0000 "Plumbing Piping Systems" for hanger and support requirements. Compressed air piping shall be supported as specified for domestic water piping.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. General: All piping, fittings and accessories shall be installed in strict accordance with the industry standard practice and applicable codes.
- B. Pipe Slope: Slope all main piping to valved drain points.
- C. Taps: Air drops from main piping shall rise vertically off the main and then turn down so as to limit moisture carryover to the air drops. Mains shall be sloped $\frac{1}{4}$ inch per 10 feet to drain legs with a valve and hose connection at the bottom of each drain leg.
- D. Valves: Provide isolation (ball) valves in each tap from the system main and at each air outlet, equipment connection, at the base of each riser and at system drain points.
- E. Buried Piping: Excavation and backfill for buried piping shall be as specified in Section 23 0300 "Basic Materials and Methods" and Section 22 0000 "Plumbing Piping Systems." Protect pipe as specified in Section 22 0000 "Plumbing Piping Systems" for underground domestic water piping. Do not install fittings in underground piping.
- F. Equipment: Air lines routed to equipment furnished by other trades shall be extended to the equipment connection point and provided with a ball valve and suitable union (dielectric if dissimilar metals are involved). Coordinate final air connections to equipment with the installing trade.
- G. Hangers and Supports: Install the entire piping system and related hangers and supports such that the piping system is properly aligned and free of stress.
 - 1. Refer to Section 23 0300 "Basic Materials and Methods" and Section 22 0000 "Plumbing Piping Systems" for additional requirements.

3.2 TESTING

- A. Test compressed air piping as specified in Section 23 0593 "Testing, Adjusting and Balancing" and Section 22 0000 "Plumbing Piping Systems."

3.3 IDENTIFICATION

- A. Refer to Section 23 03000 "Basic Materials and Methods" for applicable painting, nameplate and labeling requirements.

END OF SECTION 22 6000

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