

SECTION 23 5100
BREECHINGS, CHIMNEYS AND STACKS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Type B double wall gas vents.
- B. Vent dampers.
- C. Manufactured insulated double wall chimneys for fuel fired equipment.

1.02 RELATED REQUIREMENTS

- A. Section 23 0510 - General HVAC Requirements.
- B. Section 23 5239.13- Fire-Tube Boilers.
- C. Section 26 2717 - Equipment Wiring: Electrical characteristics and wiring connections.

1.03 REFERENCE STANDARDS

- A. ANSI Z21.66 - American National Standard for Automatic Vent Damper Devices for Use with Gas-Fired Appliances; 1996 (R2006).
- B. SMACNA (DCS) - HVAC Duct Construction Standards Metal and Flexible; 2005.
- C. UL 103 - Factory-Built Chimneys for Residential Type and Building Heating Appliances; Current Edition, Including All Revisions.
- D. UL 441 - Standard for Gas Vents; Current Edition, Including All Revisions.

1.04 SUBMITTALS

- A. Refer to Section 23 0510 - General HVAC Requirements for submittal procedures.
- B. Product Data: Provide data indicating factory built chimneys, including dimensional details of components and flue caps, dimensions and weights, electrical characteristics and connection requirements.
- C. Shop Drawings: Indicate general construction, dimensions, weights, support and layout of breechings. Submit layout drawings indicating plan view and elevations.
- D. Certificate: Provide Manufacturer's Certificate complying with the requirements of the General Conditions.
- E. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

1.05 QUALITY ASSURANCE

1.06 WARRANTY

- A. See 23 0510 - General HVAC Requirements for additional Warranty requirements.

PART 2 PRODUCTS

2.01 BREECHINGS, CHIMNEYS, AND STACKS - GENERAL REQUIREMENTS

2.02 TYPE B DOUBLE WALL GAS VENTS

- A. Manufacturers:
 - 1. Selkirk-Metalbestos.
 - 2. Jeremias.
 - 3. Metal-Fab, Inc.
- B. Fabrication: Inner pipe of sheet aluminum, and outer pipe of galvanized sheet steel, tested in compliance with UL 441.
- C. Flue shall be complete with pipe, fittings, tight joint connections (screwed or locking type), appliance draft hood connectors, spacers, fire stops, thimbles, pipe collars, sleeves, wall cap, and all hangers to provide a complete system.

- D. Electrically Actuated Vent Dampers: Same size as draft hood collar, constructed of stainless steel or galvanized steel, with corrosion-resistant components, in compliance with ANSI Z21.66.

2.03 INSULATED DOUBLE WALL METAL STACKS

- A. Manufacturers:
 - 1. Selkirk Metalbestos; Model IPS-Z3.
 - 2. Other acceptable manufacturers offering equivalent products.
 - a. Jeremias DWKL.
 - b. Metal-Fab
- B. Provide insulated double wall metal stacks, tested to UL 103 and UL listed, for use with building heating equipment, in compliance with NFPA 211.
- C. All exterior components shall be fabricated of ASTM A 666 Type 304 stainless steel.
- D. Joints: Joints for stacks for gas fired appliances shall be sealed with manufacturer supplied bands and sealant, designed for gas temperature to 600 F.
- E. Clearance to combustibles: 1 inch.
- F. Accessories, UL labeled:
 - 1. Elbows, tees and drained tee cap.
 - 2. Ventilated Roof Thimble Assembly: Consists of roof penetration, vent flashing with spacers and storm collar.
 - 3. Wall guides and support assemblies.
 - 4. Exit Cone: Consists of inner cone, and outer jacket, to increase stack exit velocity 1.5 times.
 - 5. Draft Controller:
 - a. Manufacturers: Field MG1.
 - b. Pressure Range: .002 to .1 inches W.G.
 - c. Multi-Blade, Parallel Action Gravity Balanced Backdraft Dampers: galvanized steel, with center pivoted blades of maximum 6 inch width, with felt or flexible vinyl sealed edges, linked together in rattle-free manner with 90 degree stop, steel ball bearings, and plated steel pivot pin; adjustment device to permit setting for varying differential static pressure.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Provide from boiler to cap on roof.
- C. Support breechings from building structure, rigidly with suitable ties, braces, hangers and anchors to hold to shape and prevent buckling.
- D. Support breechings independent from the appliance.
- E. For Type B double wall gas vents, maintain UL listed minimum clearances from combustibles. Assemble pipe and accessories as required for complete installation.
- F. Anchor vents to building and install fireproof thimbles. Screwed joints and draft hood connections shall be secured with a minimum of two screws.
- G. Vents from appliances shall maintain a minimum pitch or rise of 1/4-inch per foot (horizontal length) to vertical rise to cap.
- H. Assemble and install stack sections in accordance with industry practices, and in compliance with UL listing. Join sections with acid-resistant joint cement. Connect base section to foundation using anchor lugs. Level and plumb chimney and stacks.
- I. Pipe drain fitting tapping, full size to floor drain. Provide two inch trap at floor drain. Pipe shall be ASTM A 53 Schedule 40, galvanized steel ASME B16.3, malleable iron fittings.

3.02 MANUFACTURER'S FIELD SERVICES

- A. Provide manufacturer's authorized field representative to prepare and start the chimney mechanical draft control system..
- B. Start-up shall include setting of the appliance drafts and testing of safety controls and interlocks.
- C. Adjust for proper operation within manufacturer's published tolerances.
- D. Provide start-up certificate in the format prescribed by the General Conditions.

3.03 SCHEDULES

- A. Boiler: Insulated double wall stack with draft controller.

END OF SECTION