

Section 23 51 00

-Building Heating Appliances-

PART 1 - BREECHING, CHIMNEY & STACKS

1. POSITIVE PRESSURE FLUE

- a. The factory built modular chimney, breeching and components shall be tested and listed as an Industrial Chimney by Underwriters Laboratories in the United States and Canada according to UL/ULC standard for use with building heating appliances which produce exhausted flue gases at a maximum temperature of 1000°F (538°C) or 1400°F (740°C) under continuous firing.
- b. The chimney shall be listed for temperatures not exceeding 1000°F (538°C) under continuous firing and 1400°F (740°C) in brief forced firing according to UL-103, ULC-S604, and ULC-C959.
- c. The chimney shall be listed for temperatures not exceeding 1400°F (740°C) under continuous firing and 1800°F (980°C) in brief forced firing according to UL-2561.
- d. The factory built breeching system shall be made in accordance with NFPA 211. This stack system shall be designed and installed to be gas tight. It shall be listed by Underwriters Laboratories in accordance with UL103 to withstand up to 60 inch internal water column pressure at 1000°F (538°C).
- e. The UL listed fiber insulated flue and air insulated flue system shall have surface temperatures published as per the UL-103 1000°F (538°C) chimney test.

2. CONSTRUCTION

- a. Each CIX section shall be made of two steel cylinders separated by 1, 2 or 4 inch of high temperature ceramic fiber insulation. The published clearance to combustibles shall be the result of UL/ULC listing of the standard.
- b. Each CAX section shall be made two steel cylinders separated by 1 inch of air insulation. The published clearance to combustibles shall be the result of UL/ULC listing of the standard.
- c. The inner wall (flue) shall be constructed from 304 or 316 stainless steel, 0.035 inch thick. The outer wall (casing) shall be constructed from galvalume, 304 stainless or 441 stainless steel, 0.024 inch thick.
- d. Non-stainless steel surfaces exposed outside are recommended to be protected by a minimum of one base coat of primer and one finish coat of corrosion resistant paint suitable for high temperature. All primer and paint must be supplied by the contractor and shall be equivalent to series V2100 as manufactured by Rust-Oleum. An outer wall (casing) made of 304 or 316 stainless steel does not need to be painted.
- e. The inner wall (flue) shall be laser or plasma welded.
- f. All section joints shall have a self-centering sleeve to ensure proper alignment at the inner wall (flue).
- g. All section joints are connected and sealed with a factory supplied locking band at the inner wall (flue) only. Use appropriate sealant as specified in the manufacturer's installation manual. Each section joint outer wall (casing) shall have a closure band.
- h. The chimney shall be designed to compensate for thermal expansion.

PART 2 - EXECUTION

3. INSTALLATION

- a. The installation shall be in accordance with the manufacturer's installation instructions and recommendations and shall conform to all applicable state and local codes.
- b. All section joints are held in place by one mechanical locking band and sealed with appropriate sealant as recommended by the manufacturer's installation instructions and recommendations.
- c. For Positive Pressure applications, apply the sealant as recommended by the manufacturers installation instructions and recommendations.
- d. When installed according to the manufacturer's installation instructions, the chimney and its supporting system shall resist side loads at least 1.5 times the weight per foot of piping.
- e. The entire stack system from the appliance to the termination, including all accessories, except as noted, shall be from one manufacturer.
- f. Roof/Wall penetrations shall be suitable for the specified roof construction and shall comply with the manufacturer's installation instructions.

PART-3 WARRANTY

- a. The manufacturer shall warranty the chimney for *fifteen (15) years* from date of delivery for functional failure. See manufacturer's warranty for details.
- b. The sizing of the complete vent system shall be guaranteed by the manufacturer and a copy of the sizing calculations submitted to the engineer for review and approval prior to the contractor placing an order and release.
- c. The manufacturer shall submit a venting drawing for approval showing all vent system components. The contractor must position all venting components, equipment, water and gas piping to accommodate the vent system design.

PART-4 PRODUCTS

4.1 MANUFACTURERS

Specification requirements shall be met by using Security Chimneys International Commercial/Industrial Model Secure Stack PRO exhaust flue or equivalent as approved by the engineer. Equivalent submittals shall demonstrate that the alternate material is in compliance with all specification requirements.

END OF SECTION 23 51 00