

-Diesel Engine and Generator Exhaust-

PART 1 - BREECHING, CHIMNEY & STACKS

1. SCOPE

- 1.1. The pre-fabricated chimney, breeching and components shall be listed as an Industrial Chimney by Intertek in the United States and Canada according to UL/ULC standard for use with medium heat equipment firing gas, liquid or solid fuels, as described in NFPA 37 and NFPA 211, which produce exhausted flue gases at a maximum temperature of 1400°F under continuous firing.
- 1.2. The chimney shall be listed for temperatures of 1400°F under continuous firing and 1400°F in brief forced firing according to UL-103, ULC-S604, and ULC/ORD-C959.
- 1.3. 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 Intertek in accordance with UL103 to withstand up to 60-inch internal water column pressure.

PART 2 - CONSTRUCTION

2. CONSTRUCTION

- 2.1. Each CIX section shall be made of two steel cylinders separated by 2 inch of high temperature fiber insulation. The published clearance of 1 inch to combustible shall be the result of UL/ULC standard.
- 2.2. Each CAX section shall be made of two steel cylinders separated by 2 inch of air. The published clearance of 4 inches to combustible shall be the result of UL/ULC standard.
- 2.3. 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 316 stainless steel, 0.018-inch-thick for diameter 5 inch to 24 inch and 0.024 inch for diameter 26 inch to 36 inch.
- 2.4. Non-stainless steel surfaces exposed outside shall 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 4100 or 9400 as manufactured by Rust-Oleum. An outer wall made of 304 or 316 stainless steel doesn't need to be painted.
- 2.5. The inner wall (flue) shall be laser or plasma welded.
- 2.6. All section joints shall be self-centering to ensure proper spacing between the inner wall (flue) and the outer wall (casing).
- 2.7. All section joints are connected and sealed with factory supplied locking bands at the outer wall (casing) only. Use appropriate sealant as specified in the manufacturer's installation manual.
- 2.8. The chimney shall be designed to compensate for thermal expansion.

PART 3 - EXECUTION

3. INSTALLATION

- 3.1. The installation shall be in accordance with the manufacturer's installation instructions and recommendations and shall conform to all applicable state and local codes.

- 3.2. All section joints are held in place by one mechanical locking band and sealed with appropriate sealant.
- 3.3. For Positive Pressure applications, apply the sealant as recommended by the manufacturer's installation instructions and recommendations.
- 3.4. 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.
- 3.5. All 90° turns shall be made by using two 45° elbows. Entrance of each riser from the boilers to the horizontal breeching and the breeching to the entrance of the chimney shall be made using a 45° elbow and tee 45°. The 45° tee at the base of the chimney shall have a drain type tee cap.
- 3.6. The entire stack system from the appliance to the termination, including all accessories, except as noted, shall be from one manufacturer.
- 3.7. Roof/Wall penetrations shall be suitable for the specified roof construction and shall comply with the manufacturer's installation instructions.

PART 4 – WARRANTY

4. WARRANTY

- 4.1. The manufacturer shall warranty the chimney for *fifteen (15) years* from date of delivery for functional failure and failure due to condensate in the vent system. See manufacturer's warranty for details.
- 4.2. 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.
- 4.3. 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 5 - PRODUCTS

5. MANUFACTURERS

- 5.1. Specification requirements shall be met by using Security Chimneys Secure Stack Models CAX, CIX exhaust flue or equivalent as approved by the engineer. Equivalent submittals shall demonstrate that the alternate material is in compliance with all specification requirements.