

## Section 23 51 00 Breechings, Chimneys, and Stacks

### SPECIFICATIONS

#### TAG: Chimney Systems

#### PART 1 - GENERAL

##### 1.1 SUMMARY

- A. Factory-built chimney systems

##### 1.2 SUBMITTALS

- A. The manufacturer assumes no liability for the use or results of use from this document. Specifications are to be reviewed by the engineer to confirm the requirements of the project and meet Federal, State, and Local codes.
- B. As the manufacturer continues product development, it reserves the right to change design and specifications without notice.

##### 1.3 QUALITY ASSURANCE

- A. UL Listed and complies with safety standards UL103 and UL103HT. Testing has been extended to recognize CAN/ULC-S629-M87 and ULC/ORD-C959-1993, unenclosed installation and is for commercial use only.
- B. UL Listed and complies with safety standards UL2561. Testing has been extended to recognize ULC/ORD-C959-1993, unenclosed installation and is for commercial use only.
- C. UL103: Standard for Factory Built Chimneys for Residential Type and Building Heating Appliances.
- D. UL2561: Standard for 1400 Degree Fahrenheit Factory Built Chimneys.
- E. Model 2R Type HT is listed under UL103 (Building Heating Appliance Chimney). Insulated double wall building heating appliance Chimney / Type HT Factory Built Chimney intended for commercial and industrial applications in sizes 5" through 16" ID.
- F. Model 2R Type HT is listed under UL2561 (Building Heating Appliance Chimney). Insulated double wall building heating appliance Chimney/Factory Built Chimney intended for commercial and industrial application sizes 5" through 16" ID.
- G. Model 2R Type HT is listed for continuous internal temperatures of 1000°F US & 600°F Canada, intermittent temperatures of 2100°F.
- H. Model 2R is listed for continuous internal temperatures of 1400°F US & Canada, intermittent temperatures of 1800°F.
- I. Model 2R Type HT chimney system was subjected to a 30-minute exposure at a flue gas temperature test at 1125° C above room temperature in accordance with Canadian Standards with acceptable results attained.
- J. Model 2R chimney system was subjected to a 4-1/2 hour exposure at a flue gas temperature test at 1400°F (760°C). Model 2R chimney system was subjected to a 10-minute exposure at a flue gas temperature at 1800°F (980°C). Testing was conducted in accordance with US & Canadian Standards with acceptable results attained.

- K. Model 2R and Model 2R Type HT chimney system has been tested and is listed for installations in positive pressure applications where the chimney is subjected to positive pressure rather than negative or neutral pressures. The chimney system is rated for use at a maximum 60" water column internal pressure when used in Positive Pressure Applications.
- L. When installed in accordance with these instructions and National Fire Protection Association "NFPA 211"; Standard for Chimneys.

#### **1.4 WARRANTY**

- A. All units shall be provided with the following standard warranties:
  - 1. Chimney Systems are warranted to be free from defects in material and workmanship, under normal use and service from the date of shipment. A 20-Year Warranty period is included on Chimney Sections - Model 103 (HT), and all mechanical installation components such as; clamps, access doors, hardware, etc.
- B. This warranty shall not apply if:
  - 1. The equipment is not installed by a qualified installer per this installation guide; the operation manual should be kept with the equipment once installation is complete.
  - 2. The equipment is not installed in accordance with Federal, State, and Local codes and regulations.
  - 3. The equipment design or sizing is not approved per MANUFACTURER'S specifications.
  - 4. The equipment is misused, neglected, or not maintained per the MANUFACTURER'S maintenance instructions.
  - 5. The equipment is exposed to elevated temperatures due to a fire originating in the building, hood, fan, vent, or kitchen appliances.
  - 6. The equipment is not operated within its published capacity.
  - 7. The equipment is operated, tested, or stored in the presence of chlorines, solvents, refrigerant vapors, caustic substances, halogenated compounds, or other conditions that could cause condensation of corrosive materials within or on the system.
  - 8. The equipment is substituted or connected with parts not manufactured per Original Equipment Manufacturer.
  - 9. The invoice is not paid within the terms of the sales agreement.
- C. The manufacturer shall not be liable for incidental and consequential losses and damages potentially attributable to malfunctioning equipment. Should any part of the equipment prove to be defective in material or workmanship within the 20-year warranty period, upon examination by the manufacturer, such part will be repaired or replaced by manufacturer at no charge. The buyer shall pay all labor costs incurred in connection with such repair or replacement. Equipment shall not be returned without manufacturer's prior authorization, and all returned equipment shall be shipped by the buyer, freight prepaid to a destination determined by the manufacturer.

## **PART 2 - PRODUCTS**

### **2.1 GENERAL**

- A. Intended for commercial and industrial applications for removing smoke, heat and is rated for use at a maximum 60" water column internal pressure when used in positive pressure applications. Chimney system size and capacity information may be obtained from the ASHRAE Handbook – Fundamentals or from the Air Pollution Engineering Manual of the US Environmental Protection Agency.
- B. Not intended for use in family dwellings.

### **2.2 CONSTRUCTION**

- A. Inner chimney section wall shall be constructed of .036" thick, 430/444 type stainless steel and be available in diameters 5" through 16".
- B. Caustic environments, including coastal applications, single wall chimney diameters 5" through 16" shall be constructed of .036" 444 stainless steel.
- C. Double wall chimney sections and single wall thimble assembly outer shells shall be constructed of 430 stainless steel at a minimum of .024" thickness.
- D. Double wall chimney should not be used in caustic environments, including coastal applications, consult factory for additional information.
- E. Double wall chimney and single wall thimble assemblies include 2 layers of Super Wool 607 Plus or Insulfrax Elite Blanket between the inner and outer wall of the straight sections. Super Wool 607 Plus or Insulfrax Elite Blanket may be substituted with Super Wool 607 fiber or Insulfrax Elite fiber on all chimney fittings such as elbows, tees, and other.
- F. Chimney sections shall be held together through a formed V-band. V-band hardware shall be of the hex-head type with large flanges and tapered ends.
- G. Caustic environments, including coastal applications, 444 stainless steel chimney sections shall be held together by the means of a formed V clamp. V clamp hardware shall be of the hex-head type with flanged stops and tapered "lead in" threads. All single wall V clamps will be constructed of 444 stainless steel and supplied with 316 stainless steel hardware.
- H. Chimney joints shall be sealed with 3M Fire Barrier 2000+.
- I. The positive pressure ring is inserted into the chimney and sealed with 3M Fire Barrier 2000 +.
- J. Chimney systems used on positive pressure appliances will require positive pressure rings installed at each joint in the system.

## **PART 3 - EXECUTION**

### **3.1 EXAMINATION**

- A. Examine areas and conditions for compliance with requirements for installation tolerances and other conditions affecting performance of work.
- B. If unsatisfactory conditions exist, correct conditions prior to installation.

### **3.2 APPLICATION**

- A. For installation with negative or positive pressure commercial or industrial applications.
- B. Double wall chimney systems and supports should not be used in caustic environments, including coastal applications, consult the factory for additional information.

### **3.3 INSTALLATION**

- A. Install in accordance with manufacturer's instructions, drawings, written specifications, manufacturer's installation manual, and all applicable building codes.
- B. Double wall chimney and thimble assemblies shall be tested and listed at 2" clearance to combustibles.
- C. Single wall chimney sections listed to UL 103, allowing 18" clearance to combustibles.
- D. Single wall chimney sections listed to UL2561, allowing 36" clearance to combustibles.

### **3.4 CONNECTIONS**

- A. Piping installation requirements are specified in other Division 23 Sections. Drawings indicate the general arrangement of piping, fittings, and specialties. Install the chimney system to allow service and maintenance.
- B. Chimney installation requirements are specified in other Division 23 Sections. Drawings indicate the general arrangement of chimney sections.