

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. This Section includes the following:
 - 1. Listed double-wall vents.
- B. Related Sections include the following:
 - 1. Division 23 Section "Draft Control Devices" for induced-draft and mechanical fans and for motorized and barometric dampers.

1.03 SUBMITTALS

- A. Product Data: For the following:
 - 1. Category IV AL 29-4C.
- B. Shop Drawings: For vents, breechings, chimneys, and stacks. Include plans, elevations, sections, details, and attachments to other work.
 - 1. Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, methods of field assembly, components, hangers and seismic restraints, and location and size of each field connection.
 - 2. For installed products indicated to comply with design loads, include calculations required for selecting seismic restraints and structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
 - 3. The venting system supplier shall provide ASHRAE calculations to demonstrate that the venting system is compatible with the boiler manufacturer's recommendations for total pressure drop across the boiler for both low fire and high fire operation. Total pressure drop includes from combustion air intake to boiler exhaust.
- C. Welding certificates.
- D. Manufacturer Seismic Qualification Certification: Submit certification that factory-fabricated breeching, chimneys, and stacks; accessories; and components will withstand seismic forces defined in Division 23 Section "Vibration and Seismic Controls for HVAC Piping and Equipment." Include the following:
 - 1. Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.
 - a. The term "withstand" means "the unit will remain in place without separation of any parts from the device when subjected to the seismic forces specified."

23 5100 BREECHINGS, CHIMNEYS, AND STACKS
PAGE 2

- b. The term "withstand" means "the unit will remain in place without separation of any parts from the device when subjected to the seismic forces specified and the unit will be fully operational after the seismic event."
 - 2. Dimensioned Outline Drawings of Breeching, Chimneys, and Stacks: Identify center of gravity and locate and describe mounting and anchorage provisions.
 - 3. Detailed description of anchorage devices on which the certification is based and their installation requirements.
- E. Warranty: Special warranty specified in this Section.

1.04 QUALITY ASSURANCE

- A. Source Limitations: Obtain listed system components through one source from a single manufacturer.
- B. Welding: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code--Steel," for hangers and supports and AWS D9.1/D9.1M, "Sheet Metal Welding Code," for shop and field welding of joints and seams in vents, breechings, and stacks.
- C. Certified Sizing Calculations: Manufacturer shall certify venting system sizing calculations.

1.05 COORDINATION

- A. Coordinate size and location of concrete bases. Cast anchor-bolt inserts into bases. Concrete, reinforcement, and formwork requirements are specified in Division 03.
- B. Coordinate installation of roof curbs, equipment supports, and roof penetrations. These items are specified in Division 07 Section "Roof Accessories."

1.06 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of venting system that fail in materials or workmanship within specified warranty period. Failures include, but are not limited to, structural failures caused by expansion and contraction.
 - 1. Warranty Period: 15 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.01 CATEGORY IV AL 29-4C VENTS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

23 5100 BREECHINGS, CHIMNEYS, AND STACKS
PAGE 3

- C. Basis-of-Design Product: Subject to compliance with requirements, provide the product indicated on Drawings and as specified herein:
1. Heat-Fab, Inc.
 2. Selkirk Inc.; Selkirk Metalbestos and Air Mate.

2.02 DESCRIPTION

- A. The Saf-T Vent CI Plus system shall be double-wall product that consists of a flue-gas conduit fabricated from AL 29-4C® stainless steel, which is highly suited for use with high-efficiency gas burning equipment, which produce excessive amounts of condensation in the vent.
- B. The outer jacket of the system is constructed of type 430 stainless steel with a space of approximately 1" between the flue-gas conduit and the jacket
Note: CI Plus shall be with 1" insulation in the annular space.
- C. All joints in the Saf-T Vent CI Plus system are fastened with a closure system* that combines the features of Heatfab's tapered ends with a mechanical closure system which consists of tabs and a locking band. The locking band is tightened from a single location using a simple hand tool, pulling the two pieces together making a pressure tight assembly. When installed on positive pressure or condensing applications, the joints must be sealed. Diameters 4" through 16" are manufactured with a factory adhered seal. Diameters 18" through 32" must use an approved sealant on the job site. This closure system is tested to be gas tight at two and on-half times the Listed pressure rating of 15" water column.
- D. When properly installed the Saf-T Vent CI Plus system may safely and securely be utilized in either interior or exterior installations. The system is capable of withstanding reasonable wind and incidental loads as required by UL standards.
- E. When connected to gas-burning appliances with a maximum continuous flue-gas temperature of 550°F, 4" through 24" diameter Saf-T Vent CI Plus can be fully enclosed vertically by combustible materials at 1" clearance. Flue-gas temperature of 570°F, 4" through 8" diameter a fully enclosed system requires 3" clearance. For horizontal applications refer to the Clearance Chart (publication #11724).
- F. The Saf-T Vent CI Plus system is to be sized in accordance with appliance manufacturers' specifications, the most current edition of NFPA 211 Standard Chimneys, Fireplaces, Vents, and Solid Fuel-Burning Appliances, the most current edition of NFPA 54 National Fuel Gas Code (ANSI Z223.1) ASHRAE recommendations, and all applicable local and regional codes. This proper sizing, based on information supplied by the consumer, is reflected in scale drawings of the system provided by Heatfab.
- G. The Saf-T Vent CI Plus is to be installed only in accordance with Heatfab's, "Installation and Maintenance Instructions" and with all applicable local, regional, and national codes.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine areas and conditions for compliance with requirements for installation tolerances and other conditions affecting performance of work.
1. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION OF LISTED VENTS AND CHIMNEYS

- A. Locate to comply with minimum clearances from combustibles and minimum termination heights according to product listing or NFPA 211, whichever is most stringent.
- B. Seal between sections of positive-pressure vents and grease exhaust ducts according to manufacturer's written installation instructions, using sealants recommended by manufacturer.
- C. Support vents at intervals recommended by manufacturer to support weight of vents and all accessories, without exceeding appliance loading.
- D. Slope breechings down in direction of appliance, with condensate drain connection at lowest point piped to nearest drain.
- E. Lap joints in direction of flow.
- F. Connect base section to foundation using anchor lugs of size and number recommended by manufacturer.
- G. Join sections with acid-resistant joint cement to provide continuous joint and smooth interior finish.
- H. Erect stacks plumb to finished tolerance of no more than **1 inch (25 mm)** out of plumb from top to bottom.

3.03 CLEANING

- A. After completing system installation, including outlet fittings and devices, inspect exposed finish. Remove burrs, dirt, and construction debris and repair damaged finishes.
- B. Clean breechings internally, during and after installation, to remove dust and debris. Clean external surfaces to remove welding slag and mill film. Grind welds smooth and apply touchup finish to match factory or shop finish.
- C. Provide temporary closures at ends of breechings, chimneys, and stacks that are not completed or connected to equipment.

****END OF SECTION****