UNIVERSITY OF MICHIGAN
ARCHITECTURE, ENGINEERING AND CONSTRUCTION

ARCHITECTURE & ENGINEERING
326 East Hoover, Mail Stop B
Ann Arbor, MI 48109-1002
Phone: 734-764-3414
Fax: 734-936-3334

BuildingName
The Description of the Project
P00000000 0000

SPECIFICATION DIVISION 23

NUMBER SECTION DESCRIPTION

DIVISION 23 HEATING, VENTILATING AND AIR CONDITIONING (HVAC)
SECTION 235100 - BREECHINGS, CHIMNEYS AND STACKS

END OF CONTENTS TABLE

DIVISION 23 HEATING, VENTILATING AND AIR CONDITIONING (HVAC)
SECTION 235100 - BREECHINGS, CHIMNEYS AND STACKS

REVISIONS:

APRIL 2018: REVISED TO LIST MFR.S FROM PML. R BENEDEK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

INCLUDE PARAGRAPH 1.1.A AND B IN EVERY SPECIFICATION SECTION. EDIT RELATED SECTIONS 1.1.B TO MAKE IT PROJECT SPECIFIC.

A. Drawings and general provisions of the Contract, Standard General and Supplementary General Conditions, Division 1 Specification Sections, and other applicable Specification Sections including the Related Sections listed below, apply to this Section.

1.2 SCOPE OF WORK:

A. This section specifies double wall metal vents and accessories for gas fired appliances.

1.3 QUALITY ASSURANCE:

A. Welder's Qualifications: All welders shall be certified in accordance with AWS Standard D9.1, Specifications for Welding Sheet Metal.

B. Codes and Standards:

SPEC EDITOR: INSTALLATION AND REQUIREMENTS FOR SAFETY OF HEAT PRODUCING APPLIANCES AND THEIR VENTING, INCLUDING CHIMNEYS, IS PRESCRIBED BY BUILDING CODES AND INSTALLATION STANDARDS. STATE AND LOCAL LAWS CONTROL THE ADOPTION OF BUILDING CODES. DETERMINE WHICH EDITION OF A NATIONAL CODE IS ADOPTED BY REFERENCE. FAMILIARITY WITH APPLICABLE BUILDING CODES IS ESSENTIAL BECAUSE OF THE GREAT VARIATION IN LOCAL CODES.

1. NFPA: Comply with NFPA 211 "Standard for Chimneys, Fireplaces, Vents and Solid Fuel Burning Appliances".
2. UL: Comply with applicable portions of UL safety standards; provide products which have been UL listed and labeled.
3. SMACNA: Comply with SMACNA Low Pressure Duct Standards for fabricated breeching and smokepipe.
4. AWS: Comply with AWS Structural Welding Code for welders' qualifications, welding details, and workmanship standards.

SPEC EDITOR: ASHRAE EQUIPMENT HANDBOOK, CHAPTER 27, GIVES A COMPLETE LIST OF NATIONAL BUILDING CODES AND NATIONAL STANDARDS WHICH ARE APPLICABLE TO MOST APPLICATIONS.

5. ASHRAE: Comply with the ASHRAE Equipment Handbook, Chapter 27, for Chimney, Gas Vent, and Fireplace Systems, material requirements and design criteria.

1.4 ACCEPTABLE MANUFACTURERS:

1. Selkirk Metalbestos model PS
2. Van Packer Co.
3. AMP Co. model VSI
4. Metal Fab Inc.
5. Schebler

1.5 INSURANCE APPROVAL:

A. The entire installation shall be FM approved, Owner's insurance company.

PART 2 - PRODUCTS

2.1 DOUBLE WALL METAL VENTS:

SPEC EDITOR: TYPE "B" VENTS ARE USED FOR VENTING GAS (ONLY) APPLIANCES WITH DRAFT HOODS, AND OTHER APPLIANCES LISTED FOR USE WITH TYPE B VENTS. IT HAS BEEN FOUND THAT A NONCOPPER-BEARING ALUMINUM ALLOY OF 99 PERCENT PURITY OR BETTER PROVIDES SATISFACTORY PERFORMANCE IN PREFABRICATED METAL GAS VENT PRODUCTS.

A. Type B Gas Vents:

1. Description: Double wall gas vents, UL listed for Type B, consisting of an inner pipe of sheet aluminum, and other pipe of galvanized sheet steel.
2. Accessories: UL-labeled tees, elbows, increasers, draft hood connectors, metal cap with bird barrier, adjustable roof flashing, storm collar, support assembly, thimbles, fire stop spacers, and fasteners, fabricated of similar materials and designs as vent pipe straight sections.

SPEC EDITOR: FOR CHIMNEY SERVICE, TEMPERATURES FROM APPLIANCES BURNING OIL OR SOLID FUELS MAY EXCEED THE MELTING POINT OF ALUMINUM; THEREFORE, STEEL IS REQUIRED. STAINLESS STEELS SUCH AS TYPE 430 OR TYPE 304 GIVE GOOD SERVICE IN RESIDENTIAL CONSTRUCTION AND ARE RECOGNIZED IN UL LISTED PREFABRICATED CHIMNEYS. WHERE MORE CORROSIVE ENVIRONMENTS ARE ANTICIPATED, SUCH AS HIGH SULFUR FUEL OR CHLORIDES FROM SOLID FUELS OR REFUSE, TYPE 316 STAINLESS STEEL OFFERS A GOOD COMPROMISE OF CORROSION RESISTANCE AND MECHANICAL PROPERTIES. IN ADDITION, FORCED DRAFT APPLIANCES REQUIRE POSITIVE LISTED VENTS PRODUCTS.

B. All Steel, Positive Pressure, Double Wall Vents

1. Double wall stack: The double wall stack shall have an outer jacket of aluminum coated steel .025" thick in 6 inches through 24" diameters and .034" thick for larger diameters. There shall be a minimum 1" air space between the walls. The inner gas carrying pipe shall be type 304 stainless steel for gas and No. 2 fuel oil, type 316 stainless steel for coal, or No. 4 and No. 6 oil or any other solid fuels. The inner liner shall be .035" nominal thickness for all diameters.

2. Inner pipe joints shall be sealed by use of V Bands and RTV Silicone Sealant for flue gas temperatures up to 600 degrees F; above this temperature joints shall be sealed with V Bands and High Temperature Joint Cement as outlined in the installation instructions and supplied by the manufacturer.
3. Stack extending above roof surfaces must terminate as required by local code, or as required in NFPA 211. All parts exposed to the outer atmosphere should be protected by a minimum of one base coat and one finish coat of paint, such as series 4200-4300 Heat Resistant paint manufactured by Rust-O-Leum Corporation, or equivalent. Paint to be supplied and applied by installing contractor.

PART 3 - EXECUTION

3.1 INSTALLATION OF DOUBLE WALL CONNECTORS, BREECHINGS, AND VENTS:

A. Install Type B gas vents in accordance with manufacturer's installation instructions and UL listing. Maintain minimum clearances from combustibles specified in UL listing.

B. Install all steel, positive pressure, double wall gas vents in accordance with manufacturer's installation instructions and UL listing. Maintain minimum clearances from combustibles specified in UL listing.

C. Seal joints between sections of positive pressure vents in accordance with manufacturer's installation instructions, and using only sealants recommended by manufacturer.

D. Support vents at intervals recommended by the manufacturer to support the weight of the vent and all accessories, without exceeding loading of appliances.

E. Provide a drain section for each boiler in the vertical section of breeching at the boiler to prevent condensed liquids from draining back into the boiler. 1" drain piping is to be run to the nearest floor drain.

3.2 INSTALLATION OF DAMPERS:

A. Install barometric and thermostatically operated dampers in accordance with manufacturer's instructions. Locate as close to draft hood collar as possible.

3.3 ADJUSTING AND CLEANING:

A. Clean breechings internally during installation, to remove dust and debris. Clean external surfaces to remove welding slag and mill film. Grind welds smooth.

3.4 PROTECTION:

A. Temporary Closure: At ends of breechings and chimneys which are not completed or connected to equipment, provide temporary closure which will prevent entrance of dust and debris until installations are completed.

END OF SECTION 235100