SECTION 23 0140

DOUBLE WALL INSULATED BOILER BREECHING SYSTEM

PART 1 - GENERAL

Applicable Provisions of the Conditions of the Contract and Division 1 General Requirements govern the work in this section. Submit shop drawings for checking and approval.

PART 2 - PRODUCTS

2.1 DOUBLE WALL INSULATED BOILER BREECHING SYSTEM

A. Factory built modular breeching shall be laboratory tested and listed by the Underwriters Laboratories, for use with building heating equipment burning gas, solid or liquid fuels as described in NFPA 211, which produce exhausted flue gases at a temperature not exceeding 1400 degrees under continuous operating conditions. UL listing shall be for both temperature and pressure. The breeching and the stack shall be sealed and pressure tight at the operating pressures of the boiler outlet

B. The breeching and the stack shall be sealed and pressure tight at the opening pressures of the boiler outlet. Double wall vent system shall be as manufactured by Metal-Fab IPIC-2 pressurized system or approved equal.

C. The double wall breeching shall have an inner gas carrying pipe of type AL294C stainless steel. The inner wall shall be .035" minimal thickness. The outer jacket shall be aluminum coated steel .25" nominal thickness for 6" through 24" diameters. A 2" thick layer of insulation shall occupy the space between the inner and outer walls, of the entire section of the breeching and stack.

D. Inner pipe joints shall be sealed by use of V Bands and RTV Silicone Sealant.

E. Roof penetrations shall be suitable for a non-combustible roof and shall be according to the Drawings. Provide stainless steel rain cap and any required firestops and flashing.

F. The breeching shall be warranted against functional failure due to defects in material and workmanship for a period of ten (10) years from date of delivery. Functional failure is defined as any failure of the system or a component to perform its intended function without adverse leakage. During this period any defective system or component shall be repaired or replaced. Three actions are required by the Contractor to place the warranty in effect.

1. Shop drawings showing the actual layout and drawn to scale shall be provided by the manufacturer. The system shall be installed as designed by the manufacturer and in accordance with the terms of the manufacturer's 12 year warranty.

2. The inner diameter for breeching and stack shall be verified by the manufacturer's computer. The computer program shall be technically sound, shall follow ASHRAE calculation methods, and incorporate the specific flow characteristics of the inner pipe.

3. The Contractor shall furnish the exact boiler model and operating characteristics to the factory representative. Operating characteristics shall include flue gas flow rate, temperature, velocity and available external static pressure at boiler outlet, at maximum and minimum levels of burner turndown range.

G. Aluminized steel surfaces exposed to the elements shall be protected by a minimum of one base coat of primer and one finished coat of corrosion resistant paint such as series 4200 or 4300 as manufactured by Rust-o-leum. Paint to be supplied by the installing Contractor.

H. Technical Services

1. The factory built modular breeching system shall be furnished and coordinated by a vendor organization which specialized in the application of packaged boiler systems, to assure design, installation and service coordination and to provide in-warranty and post-warranty unified responsibility for Owner, Architect, consulting Engineer and Contractor.

2. Breeching vendor organization shall obtain boiler operating characteristic for the manufacturer as input for developing system configuration and parameters. Vendor shall transmit detailed stack/breeching design diagrams to Architect and consulting Engineer and shall provide periodic supervision of installation for the trade Contractor.

3. Vendor shall provide inspection report to consulting Engineer, after completion of installation, verifying proper condition of breeching system.

I. Equipment and components shall be in compliance with all standards of Air Movement and Control Association (AMCA), which apply to the various air moving equipment types, and with requirements of AMCA Certified Rating Program.

J. Equipment shall be in compliance with ANSI/AMCA Standard 210-85 laboratory methods of testing fans.

K. Compliance with ASHRAE Standard 111-1988 practices for measurement, testing, adjusting and balancing of building heating, ventilating, air conditioning and refrigeration systems.

L. Submit shop drawings for approval that shall include dimension drawings, catalog cuts, performance and construction schedules.

PART 3 - EXECUTION

3.1 INSPECTION

A. Inspect equipment space locations before beginning installation. Verify that the space is correct for entry and access. Do not proceed with installation of the equipment until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Comply with manufacturer's instructions and recommendations for installation of equipment, accessories and components.

B. All heating, ventilating and air conditioning equipment shall be carefully designed, constructed and installed so as to prevent any objectionable noise or vibration reaching any part of the building outside of the mechanical equipment room. Care shall also be taken to prevent transmission of noise or odor through ductwork into other spaces. The Contractor shall be required to rectify or replace at his own expense, any equipment not complying with the foregoing requirements.

3.3 CLEANING

A. Clean interior and exterior surfaces promptly after installation of equipment and components. Take care to avoid damage to protective coatings and finishes. Remove excess sealants, lubrication, dirt and other foreign substances.

END OF SECTION