

SECTION 15543 - FUEL-FIRED UNIT HEATERS

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes gas-fired unit heaters.

1.2 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

1.3 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace heat exchanger of fuel-fired unit heater that fail in materials and workmanship within five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. In other Part 2 articles where subparagraph titles below introduce lists, the following requirements apply for product selection:
 - 1. Manufacturers: Subject to compliance with requirements, provide products by the manufacturers specified.

2.2 GAS-FIRED UNIT HEATERS

- A. Manufacturers:
 - 1. Modine Manufacturing Company, provided by York International Corporation.
 - a. Model Number: HD 75AS011.
- B. Description: Factory assembled, piped, and wired, and complying with AGA Z83.8, "Gas Unit Heaters."
 - 1. AGA Approval: Designed and certified by and bearing label of American Gas Association.

2. Type of Gas: Designed and built to burn natural gas with characteristics same as those of gas available at Project site.
- C. Venting: Gravity.
- D. Housing: Steel, with integral draft hood and inserts for suspension mounting rods.
- E. Heat Exchanger: Aluminized.
- F. Burners: Stainless steel.
- G. Unit Fan: Propeller fan with aluminum blades dynamically balanced and resiliently mounted.
 1. Steel fan-blade guard.
 2. Motors: Totally enclosed with internal thermal-overload protection and complying with Division 15 Section "Motors."
- H. Controls: Regulated redundant 24-V ac gas valve containing pilot solenoid valve, electric gas valve, pilot filter, pressure regulator, pilot shutoff, and manual shutoff all in one body.
 1. Gas Control Valve: Single stage.
 2. Ignition: Electronically controlled electric spark with flame sensor.
 3. Fan Thermal Switch: Operates fan on heat-exchanger temperature.
 4. Vent Flow Verification: Differential pressure switch to verify open vent.
 5. Control Transformer: 24 V ac.
 6. High Limit: Thermal switch or fuse to stop burner.
 7. Sensors, components, and wiring are specified in Division 15 Section "HVAC Instrumentation and Controls."
 8. Thermostat: Single-stage, 24-V ac, wall-mounting type with 50 to 90 deg F operating range and fan on switch.
- I. Discharge Louvers: Independently adjustable horizontal blades.
 1. Unit-mounted thermostat bracket.

2.3 FACTORY FINISHES

- A. Finish: Manufacturer's standard paint applied to factory-assembled and -tested, fuel-fired unit heater before shipping.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install unit heaters level and plumb.

- B. Suspended Units: Suspend from substrate using threaded rods, spring hangers, and building attachments. Secure rods to unit hanger attachments. Adjust hangers so unit is level and plumb.
- C. Substrate-Mounted Units: Provide supports connected to substrate. Secure units to supports.
- D. Spring hangers are specified in Division 15 Section "Mechanical Vibration and Seismic Controls."

3.2 CONNECTIONS

- A. Install piping adjacent to machine to allow service and maintenance.
- B. Gas Piping: Comply with applicable requirements in Division 15 Section "Fuel Gas Piping." Connect gas piping to gas train inlet; provide union with enough clearance for burner removal and service. Provide AGA-approved flexible units.
- C. Connect vents according to Division 15 Section "Breechings, Chimneys, and Stacks."
- D. Electrical: Comply with applicable requirements in Division 16 Sections.
 - 1. Install electrical devices furnished with heaters but not specified to be factory mounted.
- E. Ground equipment according to Division 16 Section "Grounding and Bonding."

3.3 FIELD QUALITY CONTROL

- A. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

3.4 ADJUSTING

- A. Adjust initial temperature and humidity set points.
- B. Adjust burner and other unit components for optimum heating performance and efficiency.

3.5 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain fuel-fired unit heaters. Refer to Division 1 Section "Demonstration and Training".

END OF SECTION 15543

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