

Mechanical Specifications

Unit Heater

General

Furnish and install Unit Heaters where indicated on the plans and in the specifications, with required mounting components and accessories. All units shall be capable of meeting or exceeding the scheduled capacities for heating and air delivery. Units shall be ETL certified for the United States and Canada in compliance with UL/ANSI Standard 1995 and CSA C22.2 No. 236-95.

Construction

All units shall have panels fabricated of not less than 18-gauge cold rolled steel and consist of top/back and side halves. Both halves are joined on top and back with hex head screws. Top casing is furnished with threaded hanger connections for suspension of unit. Fan venture is die-formed on back half.

Casing on all vertical units are top and bottom pieces joined by corners and additional hardware. Top casing is furnished with threaded hanger connections for suspension of unit.

Units shall be equipped with horizontal, individually adjustable louvers (RH). [Vertical louvers for four-way air control shall be included (RH).]

- Option: Provide a [cone-jet] [truncone] [one-way louver] [two-way louver] [3-cone anemostat] [4-cone anemostat] to provide specific air throw pattern on vertical unit heater.
- Option: Provide a pipe hanging kit that allows the unit to be hung from threaded pipe in lieu of threaded hanger rod.

Painted finish

All painted cabinet exterior panels shall be finished with a standard textured gray epoxy powder coat paint.

Power

Units shall not exceed scheduled power consumption.

Motor

Motors shall be two speed, permanent split-capacitor, totally enclosed, permanently lubricated bearing type with automatic reset integral thermal overload protection (3-phase motors require field supplied motor overload protection), designed to handle up to 104°F maximum constant ambient temperature. Shaded pole motors are not acceptable. Single speed motors are not acceptable.

[Explosion proof motors have an enclosure designed and constructed to withstand an explosion of a specified gas or vapor which may occur within the motor and to prevent the ignition of this gas or vapor surrounding the unit. Explosion proof motor is suitable for Class I, Div I&II, Groups C&D and Class II, Div I&II, Groups F&G. The explosion proof motors may not be used with a fluid temperature in excess of 329°F and still maintain the explosion proof rating for NEC ignition temperature rating T3B for grain dust. All explosion proof motors are shelf mounted.

- Option: Provide a solid state variable speed controller.

Fan

Fans shall have non-conducting, spark-proof aluminum blades, with a steel hub. Each fan blade is balanced and designed specifically for the unit in which it is installed to assure maximum air delivery and quiet operation.

Fan guard

Fan guard shall be finger-proof, constructed of welded steel rod and finished with a standard black epoxy powder coat paint. Units mounted below 8 feet from the floor must be equipped with an OSHA fan guard to meet ETL and OSHA requirements.

Coils

Heating coil is designed for either two-pipe steam or hot water heating system. Coils shall have ½" nominal diameter seamless copper tubes and shall be mechanically expanded to provide an efficient, permanent bond between the tube and integral collar of the aluminum fin. Minimum copper tube thickness shall be 0.028".

Fins shall be die-formed and have a high efficiency aluminum surface optimized for heat transfer, air pressure drop and carryover. Minimum fin thickness shall be 0.010". Lanced fins shall not be acceptable. Fins are continuous across width and depth of coil and are vertically oriented to resist collection of dirt and foreign particles.

Coils are of non-ferrous construction and serpentine design for RH-18 and RH-24. All other units incorporate brazed steel header tubes. RH-18 through RH-86 units have ¾" female threaded NPT, brass header connections while all other units have male threaded NPT connections.

All coils shall be tested at 275 PSIG air pressure under water, and rated for a maximum 220 PSIG water or 150 PSIG steam and 375°F. Coils have CRN pressure vessel certification for Ontario and Quebec provinces.

Electrical

Units shall be furnished with single point power connection. Provide an electrical junction box for motor and other electrical terminations.

- Option: Provide an explosion proof wall thermostat, shipped loose for remote mounting.
- Option: Provide a line voltage wall thermostat, shipped loose for remote mounting. Adjustable setpoint dial included.
- Option: Provide a clear, plastic locking thermostat guard, shipped loose for remote mounting.
- Option: Provide a service disconnect switch to isolate power from the unit during maintenance.
- Option: Provide a manual motor starter to provide overload protection for the motor.
- Option: Provide a line voltage aquastat, shipped loose for remote mounting on the incoming supply piping. Adjustable setpoint dial included.

Units shall be manufactured in accordance with ISO 9001:2008 standards established and maintained by Zehnder Rittling.