
PART 1 GENERAL

1.1 RELATED SECTIONS

- .1 Section 01 33 00 - Submittal Procedures.
- .2 Section 01 74 21 – Construction/Demolition Waste Management and Disposal.
- .3 Section 01 78 00 - Closeout Submittals.
- .4 Section 23 09 33 - Electric and Electronic Control System for HVAC.

1.2 REFERENCES

- .1 Canadian Standards Association (CSA International)
 - .1 CSA C22.2 No.46, Electric Air-Heaters.

1.3 PRODUCT DATA

- .1 Submit product data in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit product data sheets for unit heaters. Include:
 - .1 Product characteristics.
 - .2 Performance criteria.
 - .3 Mounting methods.
 - .4 Physical size.
 - .5 kW rating, voltage, phase.
 - .6 Cabinet material thicknesses.
 - .7 Limitations.
 - .8 Colour and finish.
- .3 Submit product data sheets for unit heaters.
 - .1 Include product characteristics, performance criteria, physical size, limitations and finish.
- .4 Manufacturer's Instructions: Provide to indicate special handling criteria, installation sequence and cleaning procedures.

1.4 CLOSEOUT SUBMITTALS

- .1 Provide operation and maintenance data for unit heaters for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.

1.5 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate and recycle waste materials in accordance with Section 01 74 21 – Construction/Demolition Waste Management And Disposal, and with Waste Reduction Workplan.
- .2 Remove from site and dispose of packaging materials at appropriate recycling facilities.
- .3 Collect and separate for disposal paper, plastic, polystyrene, corrugated cardboard, packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan.
- .4 Divert unused metal and wiring materials from landfill to metal recycling facility approved by Department Representative.
- .5 Collect, package and store existing unit heaters for either reuse, recycling or rebuilding and return to recycler in accordance with Waste Management Plan.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- .1 Acceptable Product:
 - .1 Ouellet
 - .2 Dimplex
 - .3 Chromalox
 - .4 Stelpro.

2.2 UNIT HEATERS

- .1 Unit heater: to CSA C22.2 No.46, horizontal discharge complete with adjustable louvers finished to match cabinet or vertical discharge cone type with cone diffusers as indicated.
- .2 Fan type unit heaters with built-in high-heat limit protection, fan-delay switches.
- .3 Fan motor: totally enclosed, permanently lubricated ball bearing type with resilient mount.
 - .1 Built-in fan motor thermal overload protection.
- .4 Hangers: as indicated.
- .5 Elements: mineral insulated steel sheath with aluminum, continuous helical brazed fins.
- .6 Cabinet: steel, 1.6 mm thick, fitted with brackets for rod or wall mounting.
 - .1 Phosphatized and finished with 2 coats baked enamel in beige colour.

2.3 CONTROLS

- .1 Wall mounted thermostats: type line, low voltage or electronic, and solid state relays, Energy Star certified, to Section 23 09 33 - Electric and Electronic Control System for HVAC or Section 25 30 02 - EMCS: Field Control Devices.

PART 3 EXECUTION

3.1 INSTALLATION

- .1 Suspend unit heaters from ceiling or mount on wall as indicated. Provide mounting bracket as required.
- .2 Install thermostats in locations indicated.
- .3 Make power and control connections.

3.2 COMMISSIONING

- .1 Perform tests in accordance with Section 26 05 00 – Common Work Results-Electrical.
- .2 Test cut-out protection when air movement is obstructed.
- .3 Test fan delay switch to assure dissipation of heat after element shut down.
- .4 Test unit cut-off when fan motor overload protection has operated.
- .5 Ensure heaters and thermostatic controls operate correctly.

END OF SECTION