

1.1. REFERENCE STANDARDS**1.1.1. Air Conditioning & Refrigeration Institute (ARI):**

1.1.1.1. ARI 410 - Forced-Circulation Air-Cooling and Air-Heating Coils.

1.1.2. Canadian Standards Association (CSA):

1.1.2.1. ANSI Z83.8-2013/CSA 2.6-2013 - Gas unit heaters, gas packaged heaters, gas utility heaters and gas-fired duct furnaces.

1.1.3. Air Movement & Control Association International, Inc. (AMCA):

1.1.3.1. AMCA 211 - Certified Ratings Program - Product Rating Manual for Fan Air Performance.

1.1.3.2. AMCA 220 - Laboratory Methods of Testing Air Curtains for Aerodynamic Performance Ratings.

1.1.3.3. AMCA 222 - Application Manual for Air Curtain Units.

1.1.4. National Electrical Manufacturers Association (NEMA):

1.1.4.1. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum).

1.1.5. National Fire Protection Association (NFPA):

1.1.5.1. NFPA 54 - National Fuel Gas Code.

1.1.6. Underwriters Laboratories (UL):

1.1.6.1. UL 507 - Electric Fans.

1.1.6.2. UL 508 - Industrial Control Equipment.

1.2. AIR CURTAINS**1.2.1. General**

1.2.1.1. Designed for industrial applications such as service and dock doors. They are suitable for opening heights up to 20 ft (609.6 cm) for environmental separation and up to 18 ft (548.6 cm) for insect control.

1.2.2. Cabinet:

1.2.2.1. Material and Finish: Minimum 14-gage stainless steel welded construction.

1.2.2.2. Mounting: Provide for wall, suspension, or vertical mounting depending on local conditions. Provide for tandem mounting for vertical position only.



- 1.2.2.3. Service Access: Removable lower blower section with access panels constructed from stainless steel.

- 1.2.3. Motors:

- 1.2.3.1. Number and horsepower of motors shall be as scheduled.
 - 1.2.3.2. Direct Drive: 1160 RPM, three phase, 1-speed, totally enclosed air over (TEAO), foot mounted, continuous duty, requiring external thermal overload protection with re-greaseable ball bearings.]

- 1.2.4. Fans:

- 1.2.4.1. Balanced forward curved centrifugal type, double inlet, double width design with welded hubs, mounted in matched fan housings with aerodynamically formed air inlet venturis. Manufacture wheels and housings from galvanized steel.
 - 1.2.4.2. Drive blower wheels through flexible couplings. Support each blower wheel by two (2) permanently lubricated one (1) inch (25.4 mm) sealed ball bearings encased in vibration isolating rubber cartridges.

- 1.2.5. Discharge Nozzles:

- 1.2.5.1. Provide uniform velocity across width of air curtain.
 - 1.2.5.2. Mount on continuous piano hinge to allow deflection of air stream ± 20 degrees without loss of discharge velocity or opening area.
 - 1.2.5.3. Aperture: 4.5 in (11.4 cm) by width of air curtain.
 - 1.2.5.4. Vane: 3.5 inches (8.9 cm) minimum height; constructed of airfoil-shaped aluminum extrusions.
 - 1.2.5.5. Includes air volume control damper constructed of same material as cabinet.

- 1.2.6. Inlet:

- 1.2.6.1. Location: Front, suitable for indirect gas fired heat exchangers.
 - 1.2.6.2. Screen: Expanded metal with welded frame constructed of same material used in cabinet.
 - 1.2.6.3. Air Inlet Filter: Flat-faced type, re-cleanable aluminum] with hinged inlet screen.



1.3. HEAT EXCHANGER

- 1.3.1. Indirect Gas Heater type c/w Duct Transition
- 1.3.2. CSA Listed.
- 1.3.3. Fuel Type: Provide orifices for natural gas.
- 1.3.4. Heat Exchanger and Burner: Stainless steel.
- 1.3.5. Characteristics: 120-volt single point supply voltage, power exhaust vent, 120-volt limit control, 24-volt control voltage transformer, combustion air pressure switch, spark ignited intermittent safety pilot system with electronic flame supervision.
- 1.3.6. Independently support each heater at least one (1) inch (25 mm) from each opening of factory-installed duct transition. Construct duct transition from 16-gage aluminized steel with access panels spanning entire width.

1.4. CONTROLS**1.4.1. Control Panel:**

- 1.4.1.1. UL listed, industrial type, pre-wired, with components consisting of motor starter, terminal strip, motor overloads, and control transformer with 24 volt fused secondary.
- 1.4.1.2. Single power supply.
- 1.4.1.3. Enclosure: Oil-tight and dust-tight NEMA Type stainless steel enclosure with neoprene door gasket.
- 1.4.1.4. Mounting: to suit local conditions.
- 1.4.1.5. Disconnect Switch: Provide lockable panel mounted through the door rotary fused non-fused disconnect.
- 1.4.1.6. Time Delay Relay: Adjustable from 0.1 second to 10 hour delay.

1.4.2. Switching:

- 1.4.2.1. HAND-OFF-AUTOMATIC Switch: Panel mounted switch allows manual on-off operation or operation controlled by automatic door switch that activates unit when door opens and deactivates unit when door closes.
- 1.4.2.2. SUMMER-WINTER Switch: Panel mounted switch to manually lock out heat operation.]



1.5. MOUNTING ACCESSORIES

- 1.5.1. Provide brackets and other mounting accessories as required to permit installation and proper functioning of air curtain to meet project conditions of use.

