

SECTION 23 34 33

AIR DOORS

Berner Model E-ZONE air doors are designed for openings up to 8 ft high for environmental separation and up to 7 ft high for insect control. E-ZONE is ideal for walk-in coolers.

At exterior openings, air doors can resist winds up to 8 MPH and are generally mounted inside building to recirculate warm air, which has risen towards ceiling. Air doors may not be fully effective where negative air pressure exists on one side of door; contact Berner for additional information.

Model E-ZONE has 1/5 HP motors and is available with either a single speed or variable speed switch. E-ZONE can be wall mounted or suspended from the ceiling. Maximum recommended mounting height is 8 ft above the floor.

Edit guide specification to include only information specific to your project. Delete or add text, select appropriate bracketed phrases, and fill in blanks as required. Go to Berner catalog or website to select specific models and sizes that are required for project and to obtain data necessary to edit this document.

Coordinate specification with information shown on project drawings and schedules. In general, drawings indicate locations of air doors and switches and special mounting requirements, while sizes and capacities of air doors and utilities should be described in specifications or schedules. Cross check mechanical and architectural drawings.

Turn on "Hidden Text" function in your word processor to display "Specifier Notes."

Selection guide is available at www.berner.com to suggest models appropriate for typical applications.

For additional information or name of Berner representative in your area, call Berner International Corporation at 800-245-4455 in U.S. or 800-242-4455 in Canada, or visit www.berner.com.

PART 1 - GENERAL

1.1 CONDITIONS AND REQUIREMENTS

- A. The General Conditions, Supplementary Conditions, and Division 01 – General Requirements apply.

1.2 SECTION INCLUDES

Specifier Note: Delete items below that are not included in this section.

- A. Air doors.

- B. [Insert item description.]

1.3 RELATED REQUIREMENTS

Specifier Note: In this article, specify work specified in other sections that is related to work of this section.

- A. Section 04 22 00 - Concrete Unit Masonry: Blocking or reinforcing in wall as required for attachment of air door.
- B. Section 05 40 00 - Cold-Formed Metal Framing: Reinforcing in wall as required for attachment of air door.
- C. Section 06 10 00 - Rough Carpentry: Blocking in wall as required for attachment of air door.

Specifier Note: If switches for air doors are mounted on door frames, retain either Section 08 11 00 or 08 41 00 below to facilitate coordination.

- D. Section 08 11 00 - Metal Doors and Frames: Coordinate installation of switches.

Specifier Note: Strip doors can be used in conjunction with air doors to provide an even higher level of separation. Retain first paragraph below if required for a specific project. Consult Berner catalog for a complete list of available strip doors.

- E. Section 08 38 13 - Flexible Strip Doors: Coordinate installation of strip doors with installation of air doors.
- F. Section 08 41 00 - Entrances and Storefronts: Coordinate installation of switches.
- G. Section 08 71 00 - Door Hardware: Coordinate with installation of hardware.

Specifier Note: Retain the first paragraph below if air door cabinets are to be field painted. Protect electrical contracts and moveable parts from paint.

- H. Section 09 91 00 - Painting: Field applied finishes.
- I. Division 26 - Electrical: Connection of electrical service and controls.

Specifier Note: The following paragraph is a sample that may be used in this article. Add to or delete from the following as appropriate for the specific project.

- J. Section [xxxxx] – [Section Title]: [Include brief description of work specified in another section that is related to the work of this section.]

1.4 REFERENCE STANDARDS

- A. Air Movement & Control Association International, Inc. (AMCA):
1. AMCA 211 - Certified Ratings Program - Product Rating Manual for Fan Air Performance.

2. AMCA 220 - Laboratory Methods of Testing Air Curtains for Aerodynamic Performance Ratings.
 3. AMCA 222 - Application Manual for Air Curtain Units.
- B. National Electrical Manufacturers Association (NEMA):
1. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum).
- C. Underwriters Laboratories (UL):
1. UL 507 - Electric Fans.
 2. UL 508 - Industrial Control Equipment.

Specifier Note: Retain the following subparagraph only if a Series EZN model is required for a specific project.

- D. National Sanitation Foundation (NSF):
1. NSF/ANSI 37 - Air Curtains for Entrancesways in Food and Food Service Establishments.

1.5 SUBMITTALS

Specifier Note: In this article, specify various types of data to be furnished by the contractor before, during, or after construction. Topics included in this article are: product data, shop drawings, samples, design data, test reports, certificates, manufacturers' instructions, manufacturers' field reports, qualification statements, and closeout submittals.

- A. Submit under provisions of Section [01 33 00] [_____].
- B. Product Data: Submit for [_____] including:
1. [_____].
- C. Shop Drawings: For [_____] components not adequately described by product data. Include plans, elevations, sections, details, and attachments to other work.
- D. Operation and Maintenance Data: For air doors to include in maintenance manuals.
- E. Warranties: Sample of special warranties.

1.6 QUALITY ASSURANCE

Specifier Note: In this article, describe qualifications, regulatory requirements, certifications, field samples, mock-ups, and pre-installation meetings.

- A. Manufacturers: Firms regularly engaged in manufacture of air doors of the types and sizes required, whose products have been in satisfactory use in similar service for not less than 10 years. Provide air doors produced by a manufacturer listed in this section.
- B. Source Limitations: Obtain each type of air door through one (1) source from a single manufacturer.

- C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- D. Comply with AMCA 211 for airflow, average outlet velocity, outlet velocity uniformity, velocity projection, and power rating.
- E. Certification:

Specifier Note: Retain the following subparagraph to agree with type of unit selected for a project.

- 1. Unheated Units: Test units in accordance with AMCA 220. Provide units with AMCA Certified Ratings Seal.

- F. Units to be UL Listed in the United States and Canada.

Specifier Note: Retain the following subparagraph only if a Series EZN model is required for a specific project.

- G. Comply with NSF/ANSI 37, "Air Curtains for Entrances in Food and Food Service Establishments."

1.7 DELIVERY, STORAGE AND HANDLING

- A. Deliver air doors in factory labeled packages.
- B. Store and handle in strict compliance with manufacturer's written instructions and recommendations.
- C. Protect from damage due to weather, excessive temperature, and construction operations.

1.8 WARRANTY

- A. Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of air doors that fail in materials or workmanship within specified warranty period.
 - 1. Five-year limited warranty for unheated units.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Basis-of-Design Manufacturer: The design for air doors is based on products manufactured by Berner International Corporation, 111 Progress Avenue, New Castle; PA, Telephone: 724-658-3551; Toll-Free Telephones: 800-245-4455 (U.S.), 800-242-

4455 (Canada); Fax: 724-652-0682; email: airdoors@berner.com; Website: www.berner.com.

Specifier Note: Retain one of the following two paragraphs and delete the other.

- B. Substitutions are not permitted.
- C. Substitutions will be considered under provisions of Section 01 60 00.

2.2 AIR DOORS

Specifier Note: Delete either option in the following paragraph after selecting the model required for a specific project. If both models are required on a specific project retain both models and indicate locations on Drawings.

- A. Acceptable Products: Berner Series E-ZONE Model [EZN] [EZR].
- B. Construction: Provide factory-assembled units of sufficient structural strength to be supported from ends without intermediate support.
- C. Cabinet:
 - 1. Dimensions: Not to exceed 8-1/2 inches high by 8 inches deep.

Specifier Note: Retain one of the options in the following subparagraph. Standard housing construction is aluminized steel; optional construction is stainless steel.

- 2. Material: [Aluminized] [Stainless] steel riveted construction, with stainless steel rivets.

Specifier Note: Retain the following subparagraph if retaining "aluminized steel" for cabinet construction in subparagraph above; delete if retaining "stainless steel" for cabinet construction in subparagraph above.

- 3. [Finish: White powder coat finish.]
- D. Motors: Direct drive, 1600 rpm, resilient mounted, continuous duty, with internal thermal-overload protection and permanently lubricated sealed sleeve bearings.
- E. Fans: Balanced forward curved cross flow, tangential type with flexible hubs, made of aluminum, mounted in matched fan scrolls constructed of material used in constructing cabinet.
- F. Discharge Nozzles:
 - 1. Provide uniform velocity across width of air door.
 - 2. Aperture: 2.375 inches slot by width of air door.
- G. Vanes: 1-1/2 inches minimum height; constructed of airfoil-shaped aluminum extrusions; adjustable plus or minus 20 degrees to deflect airflow.
- H. Inlet:
 - 1. Location: Front.
 - 2. Screen: Perforated pattern constructed of the same material used in housing.

Specifier Note: Retain the following subparagraph if retaining "aluminized steel" for cabinet construction above; delete if retaining "stainless steel" for cabinet construction above.

3. [Finish: White powder coat finish.]

2.3 CONTROLS

Specifier Note: Series EZN models only available with remote switching. Series EZR models come standard with unit mounted variable speed switch.

- A. Switching: [Factory] [Remote] installed [variable] [single] speed control switch.

Specifier Note: Retain one of the following two paragraphs and delete the remaining one. In the first paragraph the air curtain turns on when door is opened and shuts off when door is closed.

- B. Basic Control Package:
 1. Line Voltage Control: NEMA 1 [plunger] [roller style] door switch.
 2. 24 Volt Control: Magnetic reed door switch and remote mounted load center.

Specifier Note: In the following paragraph the air curtain turns on when door is opened and shuts off when door is closed; unit remains on until set delay time expires.

- C. Deluxe Control Package:
 1. 24 Volt Control: Magnetic reed door switch, remote mounted control station with transformer and time delay.

Specifier Note: Retain the following paragraph and insert text describing coordinating operational sequence of air door controls if required.

- D. Sequencing: [_____].]

2.4 MOUNTING ACCESSORIES

Specifier Note: Show mounting brackets on Drawings if required.

- A. Provide brackets and other mounting accessories as required to permit installation and proper functioning of air door to meet project conditions of use.
- B. Fabricate mounting accessories from [painted aluminized] or [stainless] steel.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that door frame and adjacent construction are installed correctly and are ready to receive work of this Section.

- B. Verify that utilities are in correct location and are of correct capacities for specified products.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

Specifier Note: Delete the optional text in the following paragraph if shop drawings are not required for a specific project.

- A. Install air doors where indicated on Drawings and accordance with [shop drawings and] manufacturer's instructions. Provide clearance to permit servicing and maintenance.
- B. Securely install air doors plumb, level, and as close as practical to top of opening and face of wall.
- C. Install switches where indicated on Drawings.

3.3 CONNECTIONS

- A. Connect air door to utilities as specified in other Division 26 sections.

3.4 FIELD QUALITY CONTROL

- A. Provide a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.
- B. Test and operate air door to be sure that it performs as intended.

3.5 ADJUSTING

- A. Adjust fan speed to prepare installed products to perform properly.

Specifier Note: Delete the optional text in the following paragraph if not required for a specific project.

- B. Adjust discharge nozzles to deflect air outward [unless otherwise required].

3.6 CLEANING

- A. Clean air door prior to commissioning.
- B. Repair or repaint damage to finishes on exposed-to-view surfaces.

3.7 SYSTEM STARTUP

Specifier Note: Retain optional text in paragraph below if required for a specific project.

- A. Test and operate air doors to ensure that they perform as intended. Adjust discharge nozzles to deflect air outward [unless otherwise required].

3.8 DEMONSTRATION

- A. Demonstrate for Owner's maintenance personnel how to adjust, operate, and maintain air curtains.

END OF SECTION

© 2011 Berner International Corporation. All Rights Reserved.
A copyright license to reproduce this specification is hereby granted
to non-manufacturing engineers, architects and specification writers.
Revised 03/11