

**SECTION 08 33 00
BEST ROLLING DOORS**

ROLLING FIRE DOORS / SMOKE INHIBITIVE FIRE DOORS

GENERAL NOTES TO SPECIFIER:

THIS SPECIFICATION SECTION HAS BEEN PREPARED TO ASSIST DESIGN PROFESSIONALS IN THE PREPARATION OF PROJECT OR OFFICE MASTER SPECIFICATIONS. IT FOLLOWS GUIDELINES ESTABLISHED BY THE CONSTRUCTION SPECIFICATIONS INSTITUTE, AND THEREFORE MAY BE USED WITH MOST MASTER SPECIFICATION SYSTEMS WITH MINOR EDITING.

EDIT CAREFULLY TO SUIT PROJECT REQUIREMENTS. MODIFY AS NECESSARY AND DELETE ITEMS THAT ARE NOT APPLICABLE. VERIFY THAT REFERENCED SECTION NUMBERS AND TITLES ARE CORRECT. (NUMBERS AND TITLES REFERENCED ARE BASED ON MASTERFORMAT™, 2004 EDITION).

THIS SECTION ASSUMES THE PROJECT MANUAL WILL CONTAIN COMPLETE DIVISION 01 DOCUMENTS INCLUDING SECTIONS 01 33 00–SUBMITTAL PROCEDURES, 01 62 00–PRODUCT OPTIONS, 01 25 13–PRODUCT SUBSTITUTION PROCEDURES, 01 66 00–PRODUCT STORAGE AND HANDLING REQUIREMENTS, 01 77 00–CLOSEOUT PROCEDURES, AND 01 78 00–CLOSEOUT SUBMITTALS. IF THE PROJECT MANUAL DOES NOT CONTAIN THESE SECTIONS, ADDITIONAL INFORMATION SHOULD BE INCLUDED UNDER THE APPROPRIATE ARTICLES.

THIS IS AN OPEN PROPRIETARY SPECIFICATION ALLOWING USERS THE OPTION OF APPROVING OTHER MANUFACTURERS WHICH COMPLY WITH THE CRITERIA SPECIFIED HEREIN.

NOTES TO THE SPECIFIER ARE CONTAINED IN BOXES AND SHOULD BE DELETED FROM FINAL COPY.

OPTIONAL ITEMS REQUIRING SELECTION BY THE SPECIFIER ARE ENCLOSED WITHIN BRACKETS, E.G.: [35] [40] [45]. IN CASES WHERE ONE OF THE OPTIONAL ITEMS IS A STANDARD FEATURE OF THE DOOR MODEL, IT IS LISTED IN THE FIRST POSITION. MAKE APPROPRIATE SELECTION AND DELETE OTHERS.

ITEMS REQUIRING ADDITIONAL INFORMATION ARE UNDERLINED, E.G.: _____ .

OPTIONAL PARAGRAPHS ARE SEPARATED BY A REDLINED "OR," E.G.:

OR

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: [Manual] [and] [electric operated], automatic closing, overhead rolling [fire doors] [fire doors with Smoke-Stop UL leakage rated assembly label].
- B. Related Sections:
 - 1. 05 50 00–Metal Fabrications. Door opening jamb and head members.
 - 2. 06 10 00–Rough Carpentry. Door opening jamb and head members.
 - 3. 08 31 00–Access Doors and Panels. Access doors.
 - 4. 08 70 00–Hardware. Padlocks. Masterkeyed cylinder.
 - 5. 09 91 00–Painting. Field painting.
 - 6. Division 26. Electrical wiring and conduit, fuses, disconnect switches, connection of operator to power supply, installation of control station and wiring, and connection to alarm systems.
- C. Products That May Be Supplied, But Are Not Installed Under This Section:
 - 1. Control Station.
 - 2. Smoke/heat detectors.

3. Annunciator.

1.2 SYSTEM DESCRIPTION

A. Design Requirements:

1. Wind Loading: Supply doors to withstand up to [-__ psf +__psf tested wind load.

B. (Miami-Dade County Code Approved **High Velocity Hurricane Wind Zone** and/or Florida **High Velocity Hurricane Wind Zone Door to be Large Missile Impact Tested On Both Sides**).

OR

1. Wind Loading: Supply doors to withstand up to [- __ psf +__psf test wind load.
2. Cycle Life:
 - a. Design doors of standard construction for normal use of up to 20 cycles per day maximum.
 - b. Design door for special high cycle use for an expected life cycle of 100,000.

OR

- a. Design doors of special construction for high cycle use. Expected cycles of up to ____ per day.

INCLUDE APPROPRIATE LANGUAGE BELOW, INCLUDING A REFERENCE TO SECTION 01 23 00–ALTERNATES, IF ROLLING FIRE DOORS ARE INCLUDED IN ANY ALTERNATES, ADD SECTION 01 23 00 TO 1.1 B. DELETE IF NO ALTERNATES.

D. Alternates:

A. Performance Requirements:

IF UL LABELED SMOKE PROTECTION IS NOT DESIRED OR REQUIRED, THEN DELETE LINE ITEM “2” BELOW.

1. Provide doors with Underwriters' Laboratories, Inc. label for the fire rating classification, [3 hr].
2. Provide doors with Underwriters' Laboratories, Inc. label for “Leakage Rated Assembly” or “S” label.
 - a. Comply with NFPA 105 air leakage requirements.
 - b. Pass UL test procedure 1784.

1.3 SUBMITTALS

A. Reference Section 01 33 00–Submittal Procedures; submit the following items:

1. Product Data.
2. Shop Drawings: Include special conditions not detailed in Product Data. Show interface with adjacent work.
3. Quality Assurance/Control Submittals:
 - a. Provide proof of manufacturer product control UL verification.

- b. Provide proof of manufacturer and installer qualifications - see 1.4 below.
- c. Provide manufacturer's installation instructions.
- 4. Closeout Submittals:
 - a. Operation and Maintenance Manual.
 - b. Certificate stating that installed materials comply with this specification.

1.4 QUALITY ASSURANCE

- A. Qualifications:
 - 1. Manufacturer Qualifications: Underwriters Laboratories Registration Number. Minimum of five years experience in producing fire [and / or smoke control] units of the type specified.
 - 2. Installer Qualifications: Manufacturer's approval.

1.5 DELIVERY STORAGE AND HANDLING

- A. Reference Section 01 66 00–Product Storage and Handling Requirements.
- B. Follow manufacturer's instructions.

1.6 WARRANTY

- A. Standard Warranty: Two years from date of shipment against defects in material and workmanship.
- B. Maintenance: Submit for owner’s consideration and acceptance of a maintenance service agreement for installed products.

PART 2 PRODUCTS

2.1 MANUFACTURER

- A. Manufacturer: Best Rolling Doors Inc. 9780 NW 89 Ave Hialeah Gardens Florida 33016. Telephone: (305) 698-3550. Fax: (305) 698-3552 Web: bestrollingdoors.com Underwriters Laboratories, Inc. (UL). MIAMI-DADE COUNTY PRODUCT CONTROL APPROVED.

INSERT NAME, ADDRESS, AND PHONE NUMBERS OF LOCAL DISTRIBUTOR BELOW.

- 1. Distributor:

USE MODEL **F-45 S-10 Rolling door (constructed with 2.5” slats)**
 USE MODEL **FS-45 S-10 Rolling shutter (constructed with 1.5” slats)**

- B. Model: [F-45 S-10 Fire Door] [F45-S S-10 Fire Door or Shutter]
- C. Substitutions: Reference Section 01 25 13 Product Substitution Procedures.

2.2 MATERIALS

FOR GALVANIZED STEEL DOORS, 22 GAUGE IS STANDARD FOR DOORS THROUGH 12'-0" (3.66 m) WIDE; 20 GAUGE IS STANDARD FOR DOORS OVER 12'-0" (3.66 m) WIDE THROUGH 21'-0" (6.40 m) WIDE; 18 GAUGE IS STANDARD FOR DOORS OVER 30'-0" (9.40 m) WIDE, BUT MAY BE SPECIFIED FOR ANY SIZE DOOR. STAINLESS STEEL DOORS ARE 20 GAUGE ONLY TO A MAXIMUM OF 30'-0" (9.40 m) WIDE.

A. Curtain:

1. Slats: No. 1B (3" Inch), flat faced slats or No.1S (1 1/2" Inch) [22] [20] [18] [16] gauge, Grade 60 steel, ASTM A 653 galvanized steel zinc coating.
2. Bottom Bar: **Galvanized Steel** 1/8 inch (50x50x3.2 mm) steel angles.

OR 1 & 2

1. Slats: 3" or 1 1/2" .22 gauge slats AISI type 304 stainless steel.
2. Bottom Bar: Two 2x2x1/8 inch (50x50x3.2 mm) AISI 300 series stainless steel angles.
3. Fabricate interlocking continuous slat sections with high strength **stainless steel** end-locks or Wind-Locks secured with two 1/4" (6.35 mm) rivets per UL requirements.
4. Slat Finish:
 - a. Baked on enamel Coating System to include an ASTM A 653 galvanized base coating treated with dual process rinsing agents in preparation of a chemical bonding, light gray or white baked-on polyester base coat. Include a limited two year finish warranty.

OR

- a. Phosphate treatment followed by baked-on polyester powder coat, [color as selected by Architect from manufacturer's standard color range, minimum 32 colors] [custom color as selected by Architect]; minimum 2.5 mils (0.065 mm) cured film thickness; ASTM D-3363 pencil hardness: H or better.

OR

- a. **Galvanized Steel**: Phosphate and bonding treatment only, (no paint finish).
- b. **Best Rolling Doors standard Galvanize Steel**.

OR

- a. Stainless steel: No. 4 finish.
5. Bottom Bar Finish:
 - a. Steel: Galvanized Steel followed by a Phosphate treatment followed by a light (COLOR) baked-on polyester powder coat; minimum 2.5 mils (0.065 mm) cured film thickness.

OR

- a. Steel: Galvanized Steel followed by a Phosphate treatment followed by corrosion inhibitive baked-on zinc-rich (COLOR) polyester powder coat; minimum 2.5 mils (0.065 mm) cured film thickness.

OR

- a. Steel: ASTM A 123, Grade 85 zinc coating, hot-dip galvanized after fabrication or

OR

- a. Steel: **Galvanized Steel** treatment followed by baked-on polyester powder coat, [color as selected by Architect from manufacturer's standard color range, minimum 32 colors] [custom color as selected by Architect]; minimum 2.5 mils (0.065 mm) cured film thickness; ASTM D-3363 pencil hardness: H or better.

OR

A. Guides

- B. Guides: Fabricate with minimum 1/8 inch) [**Galvanized structural steel**] [stainless steel angles] (2.76 mm) or **Galvanized Roll-Form** (1.905mm) [Galvanized steel] [stainless steel]

- C. Top of inner and outer guide angles to be flared outwards to form bell-mouth for smooth entry of curtain into guides.

Note: Electro Galvanized is standard on all Best Rolling Doors Guides and Bottom Bars.

1. Finish:

- a. Steel: Galvanized Steel followed by a Phosphate treatment followed a by light (COLOR) baked-on polyester powder coat; minimum 2.5 mils (0.065 mm) cured film thickness.

OR

- a. Steel: **Galvanized Steel** treatment followed by corrosion inhibitive baked-on zinc-rich (COLOR) polyester powder coat; minimum 2.5 mils (0.065 mm) cured film thickness.

OR

- a. Steel: ASTM A 123, Grade 85 zinc coating, hot-dip galvanized after fabrication.

OR

- a. Steel: **Galvanizing Steel** treatment followed by baked-on polyester powder coat, [color as selected by Architect from manufacturer's standard color range, minimum 32 colors] [custom color as selected by Architect]; minimum 2.5 mils (0.065 mm) cured film thickness; ASTM D-3363 pencil hardness: H or better.

OR

MILL FINISH STRUCTURAL STAINLESS STEEL GUIDE ANGLES ARE USED FOR GUIDE COMPONENTS OVER 12'-0" (3.66 M) HIGH AND ON UNITS WIDER THAN 21'-0" (6.40 M).

- a. Stainless steel: [No. 4 finish] [Mill finish].

C. Counterbalance Shaft Assembly:

1. Barrel: Steel pipe capable of supporting curtain load with maximum deflection of 0.03 inches per foot (2.5 mm per meter) of width.
2. Spring Balance: Oil-tempered, heat-treated steel helical torsion spring assembly designed for proper balance of door to ensure that maximum effort to operate will not exceed 25 lbs (110 N). Provide wheel for applying and adjusting spring torque.

D. Brackets: Fabricate from minimum 3/16 inch (6.35 mm) steel plate with permanently lubricated ball or roller bearings at rotating support points to support counterbalance shaft assembly and form end closures.

1. Finish:

- a. Steel: Phosphate treatment followed by a light gray baked-on polyester powder coat; minimum 2.5 mils (0.065 mm) cured film thickness.

OR

- a. Galvanized treatment followed by corrosion inhibitive baked-on zinc-rich (COLOR) polyester powder coat; minimum 2.5 mils (0.065 mm) cured film thickness.

OR

- a. ASTM A 123, Grade 85 zinc coating, hot-dip galvanized after fabrication.

OR

- a. Galvanized treatment followed by baked-on polyester powder coat, [color as selected by Architect from manufacturer's standard color range, minimum 32 colors] [custom color as selected by Architect]; minimum 2.5 mils (0.065 mm) cured film thickness; ASTM D-3363 pencil hardness: H or better.

E. Hood: [24 gauge galvanized steel] [24 gauge stainless steel] with reinforced top and bottom edges. Provide minimum 1/4 inch (6.35 mm) steel intermediate support brackets as required to prevent excessive sag.

1. Finish:

a. Baked on enamel to include an ASTM A 653 galvanized base coating treated with dual process rinsing agents in preparation of a chemical bonding, light baked-on polyester base coat and a light baked-on polyester finish coat. Include a limited two year finish warranty.

OR

a. Baked on enamel and phosphate treatment followed by baked-on polyester powder coat, [color as selected by Architect from manufacturer's standard color range, minimum 32 colors] [custom color as selected by Architect]; minimum 2.5 mils (0.065 mm) cured film thickness; ASTM D-3363 pencil hardness: H or better.

OR

a. Stainless steel: No. 4 finish.

INCLUDE THE FOLLOWING SMOKE SEALS WHEN LABELED SMOKE PROTECTION IS REQUIRED - MODEL S-10 F-45 or S-10 FS-45 UNITS. CHECK CODE FOR SMOKE DETECTOR AND ALARM SYSTEM TIE-IN REQUIREMENTS. DELETE ITEM "F" IF NOT REQUIRED.

F. Smoke Seals:

1. Bottom Bar: Two, replaceable, UL listed, nylon pile smoke seals.

OR

1. Bottom Bar, Motor Operated Doors: Combination smoke seal/sensing edge.
2. Guides and Head: Replaceable, UL listed, nylon pile smoke seals sealing against fascia side of curtain.

2.3 ACCESSORIES

FIRE DOORS ARE NORMALLY NOT LOCKED, BUT MAY BE IF DESIRED. MOST COMMON LOCKING METHODS ARE LISTED BELOW; CONSULT BEST ROLLING DOOR COMMERCIAL INFORMATION ASSISTANCE (305) 698-3550 OPTION #3 FOR OTHER OPTIONS.

A. Locking:

1. Manual Chain Hoist: Padlockable chain keeper on guide.

OR

1. Padlockable slide bolt on [coil] [fascia] side bottom bar at each jamb extending into slots in guides. [Provide interlock switches on motor operated units.]

OR

1. Masterkeyable cylinder operable from [coil] [fascia] [both] side[s] of bottom bar. [Provide interlock switches on motor operated units.]

VISION PANELS ARE AVAILABLE ON UL RATED DOORS THROUGH 3 HOURS. SHOW NUMBER (6 MAXIMUM PER DOOR) AND PLACEMENT ON DRAWINGS. MINIMUM SPACING IS 5" (127 mm) APART, 12" (305 mm) IN FROM GUIDES.

B. Vision Panels: 10x1-5/8x3/16 inch (254x41x4.76 mm) thick FireView oval glass panes set in metal frames and mechanically fastened to slat. Refer to drawings for number and placement.

INCLUDE F-45 BBS BATTERY BACK-UP SYSTEM TO BEST FIRE MOTOR OPERATORS TO ADD A FOUR HOUR TIME DELAY TO AUTO-CLOSING UPON POWER FAILURE. THIS SYSTEM DOES NOT PROVIDE FOR POWER OPENING OF THE UNIT. COORDINATE WITH SECTION 2.4-C.1.a FOR MOTOR OPERATED SYSTEMS.

C. Provide Model F-45 BBS Battery Back-Up System for Best Motor Operator. Provides four hours of door open holding time in the event of a power failure. Can power local detectors and warning appliances. Allows for programming open/close obstruction cycling should the sensing edge encounter an obstruction under the door during AC power, alarm signal closing.

D. [Photoelectric Smoke/Heat Detector] [Ionization Smoke Detector]: UL listed.

FIRE EMERGENCY ANNUNCIATORS ARE AVAILABLE FOR USE WITH BEST FIRE MOTOR OPERATOR AND FIRESTOP SERIES RELEASE DEVICES. HORN/STROBE AVAILABLE WITH BEST FIRE MOTOR OPERATOR AND ALL FIRESTOP SERIES DEVICES; VOICE WARNING MODULE AVAILABLE. COORDINATE WITH SECTIONS 2.4-A & 2.4-C, DELETE IF NOT DESIRED.

E. Fire Emergency Annunciator: [Provide ADA compliant horn/strobe] [Provide Voice Warning Module] fire emergency annunciator to give advanced warning that the fire door is about to close. Warning signal to activate upon alarm signal.

EXPOSED MOVING OPERATOR COMPONENTS LOWER THAN 8 FEET ABOVE FLOOR LEVEL THAT CREATE POSSIBLE PINCH POINTS ARE REQUIRED TO BE COVERED PER UL 325. SPECIFY AN OPERATOR COVER WHENEVER THIS FIELD CONDITION EXISTS.

F. Operator [and Full Bracket Mechanism] Cover: Provide [24 gauge galvanized steel] [24 gauge stainless steel] sheet metal cover [to provide weather resistance] [to enclose exposed moving operating components] at coil area of unit. Finish to match door hood.

2.4 OPERATION

A. Motor Operated: Best Rolling Motor Operator Model F-45, UL listed, NEMA 1 enclosure rating, horsepower as recommended by manufacturer, [115v single] [230v single] [208/230v three] [460v three] phase service. Provide open drip-proof motor, removable without affecting setting of limit switches; thermal overload protection; solenoid brake; planetary reduction gearing and rotary limit switches; transformer with 24 v control secondary; and all integral electrical components prewired to terminal blocks.
Automatic closure shall be activated by fusible link [or a local smoke/fire detector] [or a central smoke/fire alarm system]. Doors shall not require a releasing device when activated by an alarm signal.
Doors shall maintain an average closing speed of not more than 9" (229 mm) per second during automatic closing. When automatic closure is activated, electric sensing edge and push button are inoperable.
Doors shall be fail-safe and close upon power failure.

Resetting of spring tension or mechanical dropouts shall not be required. Upon restoration of power, replacement of fusible link or clearing of the alarm signal, doors shall immediately reset by opening with the push button.

The **electrical contractor** shall mount the control station(s) and supply the appropriate disconnect switch, all conduit and wiring per the overhead door wiring instructions. Qualified and licensed electrical contractor to do all electrical wiring.

OR

- A. Manual Chain Hoist: Provide combination chain / controlled closing system operator including endless steel chain, geared reduction unit, chain keeper and a [wall mounted Push To Close station] [combination close operation / automatic drop test cable] located at floor level. Integral to the unit is a locking mechanism to hold the door at any position of travel during normal door operation mode and a governor to control automatic closing speed.
Automatic closure shall be activated by fusible link [or a local smoke/fire detector by means of a fail-safe releasing device] [or a central smoke/fire alarm system by means of a fail-safe releasing device].
Doors shall maintain an average closing speed of not more than 24" (610mm) per second during normal and automatic closing.
Resetting of spring tension or mechanical dropouts shall not be required.

OR

- A. Manual Crank Hoist: Provide combination crank / controlled closing system operator including removable hand crank, geared reduction unit and a [wall mounted Push To Close station] [combination close operation / automatic drop test cable] located at floor level. Integral to the unit is a locking mechanism to hold the door at any position of travel during normal door operation mode and a governor to control automatic closing speed.
Automatic closure shall be activated by fusible link [or a local smoke/fire detector by means of a fail-safe releasing device] [or a central smoke/fire alarm system by means of a fail-safe releasing device].
Doors shall maintain an average closing speed of not more than 9" (229 mm) per second during normal and automatic closing.
Resetting of spring tension or mechanical dropouts shall not be required.

OR

- A. Manual Push-Up with Conventional Spring Release System: Provide lift handles on bottom bar and pole with hook.
Automatic closure shall be activated by fusible link [or a local smoke/fire detector by means of a fail-safe releasing device] [or a central smoke/fire alarm system by means of a fail-safe releasing device].
Doors shall maintain an average closing speed of not less than 6" (152 mm) nor more than 24" (610 mm) per second during automatic closing per NFPA 80.
Resetting of spring tension and mechanical dropouts by a trained door systems technician is required.

MOST COMMON CONTROL STATIONS FOR MOTORIZED FIRE DOORS ARE LISTED BELOW. CONSULT Best Rolling Architectural Design Unit. FOR OTHER OPTIONS. DELETE IF MANUALLY OPERATED.

1. Control Station: Surface mounted, "Open/Close/Stop" push buttons; NEMA 1.

OR

1. Control Station: Flush mounted, "Open/Close/Stop" push buttons; NEMA 1B.

OR

1. Control Station: Surface mounted, "Open/Close" key switch with "Stop" push button; NEMA 1.

OR

1. Control Station: Flush mounted, "Open/Close" key switch with "Stop" push button; NEMA 1B.

SMOKE SEAL/SENSING EDGE IS REQUIRED WITH MOTOR OPERATOR SYSTEMS.
COORDINATE WITH 2.2F. DELETE IF MANUALLY OPERATED.

- B. Smoke Seal/Sensing Edge: Provide automatic [reversing] [stop] control by an automatic sensing switch within neoprene astragal extending full width of door bottom bar.
 1. Provide an electric sensing edge device. Contact before door fully closes shall cause door to immediately [stop downward travel and reverse direction to the fully opened position] [stop downward travel]. Provide a self-monitoring wireless sensing edge connection to motor operator eliminating the need for a physical traveling electric cord connection between bottom bar sensing edge device and motor operator. Supervised system alters normal door operation preventing damage, injury or death due to an inoperable sensing edge system.

OR

1. Provide an electric sensing edge device. Contact before door fully closes shall cause door to immediately [stop downward travel and reverse direction to the fully opened position] [stop downward travel]. Provide a wireless sensing edge connection to motor operator eliminating the need for a physical traveling electric cord connection between bottom bar sensing edge device and motor operator.

OR

1. Provide an electric sensing edge device. Contact before door fully closes shall cause door to immediately [stop downward travel and reverse direction to the fully opened position] [stop downward travel]. Provide [self-coiling cable] [retracting safety cord and reel] connection to control circuit.

C. Automatic Closing and Speed Governor Mechanism:

FOLLOWING OPTION IS FOR MOTOR OPERATED DOORS ONLY. BOTTOM BAR SENSING EDGE (2.2 F. AND 2.4 B.) IS REQUIRED.

1. Motor Operated System:
 - a. Activation: [Central alarm system] [Local smoke and heat detectors] or [power outage] [power outage greater than 4 hours with use of Best Rolling Doors -BBU back up device] and melting of fusible link.
 - b. Operation: Motor operator shall close door upon signal from [central alarm system] [local smoke and heat detectors], power outage or melting of fusible link.
 - c. Closing Speed: Not more than 9 inches (229 mm) per second.
 - d. Reset Procedure: Operation of control station after alarm is cleared or power is restored or replace fusible link; resetting of spring tension or mechanical dropouts shall not be required.

OR

1. [Chain] [Crank] System:
 - a. Activation: [Melting of fusible link] [Melting of fusible link or alarm signal with use of an operator mounted [automatic reset] [floor level reset] [release device].
 - b. Operation: Hand [chain] [crank] and use of a [wall mounted Push To Close station] [combination close operation / automatic drop test cable] located at floor level for

normal use. When automatic closing is activated, integral brake and [chain] [crank] operator shall disengage. Integral governor controls closing speed.

- c. Average Closing Speed: Not more than 9 inches (229 mm) per second.
- d. Reset Procedure: Resetting of spring tension or mechanical dropouts shall not be required. If tested by activating [Push To Close station] [automatic drop test cable], reset by releasing controller. [If activated by [an automatic reset release device, clear alarm and/or restore power.] [a floor level reset release device, pull and hold floor level release reset cable for 3 seconds once alarm is cleared and/or power is restored.]] If tested by melting / cutting of fusible link, replace fusible link and reset fire mechanism.

OR

- 1. Fusible Link with Fire Stop or Best Release Device – Manual Push-Up Operation:
 - a. Activation: [Central alarm system] [Local smoke and heat detectors] or power outage in excess of 10 seconds or melting of fusible link.
 - b. Average Closing Speed: Not less than 6 inches (152 mm) nor more than 24 inches (610 mm) per second.
 - c. Reset Procedure: Reset spring tension and mechanical dropouts; reset Fire-Stop Best Release-D or replace fusible link.

OR

- 1. Fusible Link with Fire Stop Best Release Device – Manual Push-Up Operation:
 - a. Activation: [Central alarm system] [Local smoke and heat detectors] or power outage in excess of 72 hours or melting of fusible link.
 - b. Average Closing Speed: Not less than 6 inches (152 mm) nor more than 24 inches (610 mm) per second.
 - c. Reset Procedure: Reset spring tension and mechanical dropouts; reset FireGard BB or replace fusible link.

OR

- 1. Fusible Link with Fire Stop DC Release Device – Manual Push-Up Operation:
 - a. Activation: [Central alarm system] [Local smoke and heat detectors], DC alarm system power outage or melting of fusible link.
 - b. Average Closing Speed: Not less than 6 inches (152 mm) nor more than 24 inches (610 mm) per second.
 - c. Reset Procedure: Reset spring tension and mechanical dropouts; reset FireStop DC or replace fusible link.

OR

- 1. Fusible Link – Manual Push-Up Operation:
 - a. Activation: Melting of fusible link.
 - b. Average Closing Speed: Not less than 6 inches (152 mm) nor more than 24 inches (610 mm) per second.
 - c. Reset Procedure: Reset spring tension and mechanical dropouts; replace fusible link.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine substrates upon which work will be installed and verify conditions are in accordance with approved shop drawings.
- B. Coordinate with responsible entity to perform corrective work on unsatisfactory substrates.

C. Commencement of work by installer is acceptance of substrate.

3.2 INSTALLATION

A. General: Install door and operating equipment with necessary hardware, anchors, inserts, hangers and supports.

INCLUDE NFPA 105 WHEN LABELED SMOKE PROTECTION IS REQUIRED - MODEL ERD11 UNITS.

B. Comply with [NFPA 80] [NFPA80 and NFPA 105] and follow manufacturer's installation instructions.

3.3 ADJUSTING

A. Following completion of installation, including related work by others, lubricate, test, and adjust doors for ease of operation, free from warp, twist, or distortion.

3.4 FIELD QUALITY CONTROL

A. Site Test: Test doors for normal operation and automatic closing. Coordinate with authorities having jurisdiction to witness test and sign Drop Test Form.

3.5 CLEANING

A. Clean surfaces soiled by work as recommended by manufacturer.

B. Remove surplus materials and debris from the site.

3.6 DEMONSTRATION

A. Demonstrate proper operation, testing and reset procedures to Owner's Representative.

B. Instruct Owner's Representative in maintenance procedures.

END OF SECTION