



SECTION 08 33 23

OVERHEAD COILING FIRE DOORS

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**** NOTE TO SPECIFIER ** Overhead Door Corporation; Overhead coiling fire door products.**

**This section is based on the products of Overhead Door Corporation, which is located at:
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Lewisville, TX 75067
Toll Free: (800) 929-3667
Phone: (469) 549-7100
Fax: (972) -906-1499
Web Site: www.overheaddoor.com
E-mail: info@overheaddoor.com**

Overhead Door Corporation pioneered the upward-acting door industry, inventing the first upward-acting door in 1921 and the first electric door opener in 1926. Today, we continue to be the industry leader through the strength of our product innovation, superior craftsmanship and outstanding customer support, underscoring a legacy of quality, expertise and integrity. That's why design and construction professionals specify Overhead Door Corporation products more often than any other brand.

This specification includes overhead coiling fire doors. Overhead Door Corporation offers a wide array of rolling steel doors to meet the most demanding fire safety standards, unusual opening sizes and aesthetic requirements. Designed to close automatically in the event of a fire or alarmed event, our fire-rated doors are available for service door and counter applications in commercial, industrial, institutional and retail uses.

PART 1 GENERAL

1.1 SECTION INCLUDES

**** NOTE TO SPECIFIER ** Delete items below not required for project.**

- A. Overhead coiling fire service doors.
- B. Overhead coiling insulated fire doors.
- C. Overhead coiling counter fire doors.
- D. Overhead coiling counter fire doors with integral frames.

1.2 RELATED SECTIONS

**** NOTE TO SPECIFIER ** Delete any sections below not relevant to this project; add others as required.**

- A. Section 05500 - Metal Fabrications: Support framing and framed opening.

- B. Section 06200 - Finish Carpentry: Wood jamb and head trim.
- C. Section 08710 - Door Hardware: Product Requirements for cylinder core and keys.
- D. Section 09900 - Painting: Field applied finish.
- E. Section 16130 - Raceway and Boxes: Conduit from electric circuit to door operator.
- F. Section 16150 - Wiring Connections: Power to disconnect.

1.3 REFERENCES

**** NOTE TO SPECIFIER ** Delete references from the list below that are not actually required by the text of the edited section.**

- A. ASTM A 653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- B. ASTM A 666 - Standard Specification for Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar.
- C. ASTM A 924 - Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process.
- D. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum).
- E. NEMA MG 1 - Motors and Generators.
- F. NFPA-80 – Standard for Fire Doors and Fire Windows.

1.4 DESIGN / PERFORMANCE REQUIREMENTS

- A. Fire Rated Assemblies: Provide assemblies complying with NFPA 80 and listed in UL Directory or Intertek Testing Services (Warnock Hersey Listed) Directory.

1.5 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 1. Preparation instructions and recommendations.
 2. Storage and handling requirements and recommendations.
 3. Details of construction and fabrication.
 4. Installation methods.
- C. Shop Drawings: Include detailed plans and elevations, details of framing members, anchoring methods, clearances, hardware, and accessories.

**** NOTE TO SPECIFIER ** Delete selection samples if colors have already been selected.**

- D. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
- E. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) long, representing actual product, color, and patterns.
- F. Manufacturer's Certificates: Certify products meet or exceed specified requirements.

- G. Operation and Maintenance Data: Submit lubrication requirements and frequency, and periodic adjustments required.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in performing Work of this section with a minimum of five years experience.
- B. Installer Qualifications: Installer Qualifications: Company approved by manufacturer, specializing in performing Work of this section with minimum three years experience, with IDEA Certified Installers and service technicians on staff.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Protect materials from exposure to moisture. Do not deliver until after wet work is complete and dry.
- C. Store materials in a dry, warm, ventilated weathertight location.

1.8 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.9 COORDINATION

- A. Coordinate Work with other operations and installation of adjacent materials to avoid damage to installed materials.

1.10 WARRANTY

- A. Manufacturer's Warranty: Provide manufacturer's two year limited warranty.

**** NOTE TO SPECIFIER ** Include the following warranty paragraph for 630, 631, 634 and 635 Models overhead coiling fire service doors and RHX commercial door operators provided together as a System. Delete if not applicable.**

- B. Warranty: Manufacturer's limited door and operators System warranty of all parts and components of the system except counterbalance spring and finish for 3 years or 20,000 cycles, whichever comes first.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Overhead Door Corporation, 2501 S. State Hwy. 121, Suite 200, Lewisville, TX 75067. ASD. Tel. Toll Free: (800) 275-3290. Phone: (469) 549-7100. Fax: (972) 906-1499. Web Site: www.overheaddoor.com. E-mail: info@overheaddoor.com.

**** NOTE TO SPECIFIER ** Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.**

- B. Substitutions: Not permitted.
- C. Requests for substitutions will be considered in accordance with provisions of Section 01600.

**** NOTE TO SPECIFIER ** Models 630, 631 and 634 fire service comply with NFPA 80 for masonry and non-masonry installation. Customized doors are available for conveyor installations. Contact Overhead Door for additional information.**

2.2 OVERHEAD COILING FIRE SERVICE DOORS

- A. Overhead Coiling Fire service Doors: FireKing Model 630 Fire Doors.
 - 1. Label: Provide fire doors certified with the following listing.

**** NOTE TO SPECIFIER ** Select one or more of the following paragraphs to suit the projects requirements for the door size(s) required and delete the ones not required. Note that UL Labels are standard and FM labels are optional.**

- a. Rolling fire doors up to 152 sf (14.12 sm) and not exceeding 13 feet 6 inches (4.11 m) in width or height shall receive the UL 4-Hour Class A Label when face mounted to masonry opening.
- b. Rolling fire doors up to 152 sf (14.12 sm) and not exceeding 13 feet 6 inches (4.11 m) in width or height shall receive the UL 3-Hour Class A Label for installation on masonry or steel jamb walls, face mounted or between jambs. Door may be welded to the face of steel jambs.
- c. Rolling fire doors up to 152 sf (14.12 sm) and not exceeding 13 feet 6 inches (4.11 m) in width or height shall receive the ULC 3-Hour Class A Label for installation on masonry or steel jamb walls, face mounted or between jambs. Door may be welded to the face of steel jambs.
- d. Rolling fire doors up to 144 sf (13.7 sm) and not exceeding 12 feet (3.7 m) in height or width shall receive the FM 3-Hour Class A Label for masonry or concrete walls or steel wall jambs.
- e. Rolling fire doors up to 130 sf (12.1 m) and height not exceeding 11 feet (3.4 m) and width not exceeding 12 feet (3.7 m) shall receive the FM 3-Hour Class A Label for steel tubes set against fire walls (masonry or non-masonry construction).
- f. Rolling fire doors up to 152 sf (14.12 sm) and 13 feet 6 inches (4.11 m) in width or height shall receive the UL 1-1/2-Hour Class B Label for installation in non-masonry walls, face mounted or between jambs.
- g. Rolling fire doors up to 117 sf (13.4 sm) and not exceeding 11 feet (3.4 m) in height or width shall receive the FM 1-1/2-Hour Class B Label when installed on 2-hour fire-rated gypsum dry walls.
- h. Rolling fire doors up to 152 sf (14.12 sm) and 13 feet 6 inches (4.11 m) in width or height shall receive the ULC 1-1/2-Hour Class B Label for installation in non-masonry walls, face mounted or between jambs.

**** NOTE TO SPECIFIER ** Select the following paragraphs for UL Label and delete if not applicable.**

- i. Rolling fire doors over 152 sf (14.12 sm) shall receive the UL Oversize Fire Door Label.

**** NOTE TO SPECIFIER ** Select the following paragraphs for optional FM Label and delete if not applicable.**

- j. Rolling fire doors over 152 sf (14.12 sm) and not exceeding 18 ft (5.49 m) in height or width shall receive the FM Oversize Fire Door Label. Doors over 18 ft (5.49 m) must be reviewed and certified by FM.

**** NOTE TO SPECIFIER ** Select the following paragraph as required for smoke protection and delete if not required.**

- k. Provide UL labeled smoke protection where indicated. Comply with with UL label for "Leakage Rated Assembly" or "S" label.
 - 1) Comply with NFPA 105 air leakage requirements.
 - 2) Pass UL test procedure 1784.
- 2. Curtain: Interlocking roll-formed slats as specified following. Endlocks shall be attached to each end of alternate slats to prevent lateral movement.

**** NOTE TO SPECIFIER ** Select one of the following paragraphs for the door size and profile required and delete the ones not required.**

- a. Curved profile type C-187 for doors thru 14 feet (4.27 m) wide by 12 feet (3.65 m) high, fabricated of:

**** NOTE TO SPECIFIER ** Select one of the following paragraphs and delete the ones not required.**

- 1) 22 gauge galvanized steel.
- 2) 20 gauge galvanized steel.
- 3) 18 gauge galvanized steel.
- 4) 22 gauge stainless steel.
- 5) 20 gauge stainless steel.

- b. Curved profile type C-187 for doors over 14 feet (4.27 m) thru 20 feet (6.10 m) wide, fabricated of:

**** NOTE TO SPECIFIER ** Select one of the following paragraphs and delete the ones not required.**

- 1) 20 gauge galvanized steel.
- 2) 18 gauge galvanized steel.
- 3) 20 gauge stainless steel.

- c. Curved profile type C-275 for doors thru 14 feet (4.27 m) wide by 12 feet (3.65 m) high, fabricated of:

**** NOTE TO SPECIFIER ** Select one of the following paragraphs and delete the ones not required.**

- 1) 22 gauge galvanized steel.
- 2) 20 gauge galvanized steel.
- 3) 18 gauge galvanized steel.
- 4) 22 gauge stainless steel.
- 5) 20 gauge stainless steel.

- d. Curved profile type C-275 for doors over 14 feet (4.27 m) thru 20 feet (6.10 m) wide, fabricated of:

**** NOTE TO SPECIFIER ** Select one of the following paragraphs and delete the ones not required.**

- 1) 20 gauge galvanized steel.
- 2) 18 gauge galvanized steel.
- 3) 20 gauge stainless steel.
- 4) 18 gauge stainless steel.

- e. Curved profile type C-275 for doors over 20 feet (6.10 m) thru 24 feet (7.31 m) wide, fabricated of:

**** NOTE TO SPECIFIER ** Select one of the following paragraphs and delete the one not required.**

- 1) 18 gauge galvanized steel.
- 2) 16 gauge galvanized steel.
- 3) 18 gauge stainless steel.

- f. Flat profile type F-265 for doors thru 14 feet (4.27 m) wide by 12 feet (3.65 m) high, fabricated of:

**** NOTE TO SPECIFIER ** Select one of the following paragraphs and delete the ones not required.**

- 1) 22 gauge galvanized steel.
- 2) 20 gauge galvanized steel.
- 3) 22 gauge stainless steel.
- 4) 20 gauge stainless steel.

- g. Flat profile type F-265 for doors over 14 feet (4.27 m) thru 20 feet (6.10 m) wide, fabricated of:

**** NOTE TO SPECIFIER ** Select one of the following paragraphs and delete the ones not required.**

- 1) 20 gauge galvanized steel.
- 2) 18 gauge galvanized steel.
- 3) 20 gauge stainless steel.
- 4) 18 gauge stainless steel.

- h. Flat profile type F-265 for doors over 20 feet (6.10 m) thru 24 feet (7.31 m) wide, fabricated of:

**** NOTE TO SPECIFIER ** Select one of the following paragraphs and delete the one not required.**

- 1) 18 gauge galvanized steel.
- 2) 18 gauge stainless steel.

**** NOTE TO SPECIFIER ** Select the following paragraph if glazing is required and delete if not required. Available on 4 hour, 3 hour, and 90 minute labeled doors with flat slat profile only.**

- 3. Glazing: Fire-rated vision panels, four glazing panels 3 inch by 5/8 inch (76 by 16 mm) with FireLite glazing.
- 4. Finish:

**** NOTE TO SPECIFIER ** Select the following paragraphs for the slat and hood materials required and delete the ones not required.**

- a. Galvanized Steel: Slats and hood galvanized steel to ASTM A 653 finished with a rust-inhibitive roll coating process, including bonderizing, a 0.2 mils thick baked prime paint, and a 0.6 mils thick baked top coat.

**** NOTE TO SPECIFIER ** Select one of the following two paragraphs for Polyester top coat or Powder top coat and delete the one not required. Polyester top coat is standard.**

- 1) Polyester Top Coat.
 - (a) Gray polyester.
 - (b) Tan polyester.
 - (c) White polyester.
 - (d) Brown polyester.
- 2) Powder coat: PowderGuard

**** NOTE TO SPECIFIER ** PowderGuard Premium weather resistant polyester powder coat available in 197 colors; custom color match and EZ Clean treatment options available. See Tiger Drylac RAL Colors* Brochure for color selection. PowderGuard Weathered Finish available in 11 color options, see PowderGuard Finish brochure for color selection.**

- (a) PowderGuard Premium: Weather resistant polyester powder coat color as selected by the Architect.
- (b) PowderGuard Weathered Finish: Industrial textured powder coat provides a thicker, more scratch resistant coat. Applied to entire door system including slats, guides, bottom bar and head plate.

- b. Non-galvanized exposed ferrous surfaces shall be black powder coated.

- c. Stainless Steel: Slats shall be stainless steel finished as follows.

**** NOTE TO SPECIFIER ** Select one of the following two paragraphs and delete the one not required.**

- 1) Finish: 2B mill finish.
- 2) Finish: No. 4 satin finish.

**** NOTE TO SPECIFIER ** Select one of the following bottom bar paragraphs and delete the ones not required. Stainless steel bottom bars are required for conveyor applications.**

- 5. Bottom Bar:
 - a. Two black powder coated structural steel angles 1-1/2 inch by 1-1/2 inch by 1/8 inch (38 mm by 38 mm by 3 mm) minimum.

- b. Two structural steel angles with PowderGuard Zinc Finish 1-1/2 inch by 1-1/2 inch by 1/8 inch (38 mm by 38 mm by 3 mm) minimum.
 - c. Two galvanized steel angles with 1-1/2 inch by 1-1/2 inch by 1/8 inch (38 mm by 38 mm by 3 mm) minimum.
 - d. Two stainless steel angles 1-1/2 inch by 1-1/2 inch by 1/8 inch (38 mm by 38 mm by 3 mm) minimum.
6. Guides: Three structural steel angles with minimum thickness of 3/16 inch (5 mm) for doors over 12 feet (3.65 m) wide or high. Guides for between jamb doors shall be structural angles.

**** NOTE TO SPECIFIER ** Select one of the following two finish paragraphs and delete the one not required.**

- a. Finish: PowderGuard Weathered finish with iron/black powder.
- b. Finish: PowderGuard Zinc Finish for guides, bottom bar and head plate.

**** NOTE TO SPECIFIER ** Select one of the following fastening paragraphs to meet projects installation requirements and delete the one not required.**

- c. Fastening Guides to Masonry Fire Walls: UL listed for fire in accordance with manufacturer's listing.
- d. Fastening Guides to Masonry Fire Walls: UL listed for fire and smoke in accordance with manufacturer's listing.
- e. Fastening Guides to Non-Masonry Fire Walls: Comply with the manufacturer's listing.

7. Brackets: To support counterbalance, curtain and hood

**** NOTE TO SPECIFIER ** Select one of the following two paragraphs and delete the one not required.**

- a. Hot rolled steel with black powder coated finish.
 - b. Hot rolled steel with PowderGuard Zinc finish.
8. Counterbalance: Helical torsion spring type housed in a steel tube or pipe barrel, supporting the curtain with deflection limited to 0.03 inch per foot of span. Counterbalance is adjustable by means of an adjusting tension wheel.
9. Hood:

**** NOTE TO SPECIFIER ** Select one of the following two paragraphs and delete the one not required. Add the last paragraph for optional FM labeled hoods only.**

- a. Fabricate of 24 gauge galvanized primed steel minimum for wall openings thru 19 feet (5.79 m) wide.
- b. Fabricate of 22 gauge galvanized primed steel for wall openings over 19 feet (5.79 m) wide.
- c. Hood equipped with thermally controlled, internal, galvanized steel flame baffle as required for FM listing.

**** NOTE TO SPECIFIER ** Select one of the following two paragraphs and delete the one not required.**

- d. Provide one intermediate support bracket for wall openings over 13 feet 6 inches (4.11 m) wide
- e. Provide two support brackets for wall openings over 19 feet (5.79 m) wide.

**** NOTE TO SPECIFIER ** Select one of the following Operation paragraphs for manual operation or electric motor operation and delete the one not required.**

10. Manual Operation:

**** NOTE TO SPECIFIER ** Select one of the following manual operation paragraphs and delete the ones not required.**

- a. Manual push.
 - b. Crank operation.
 - c. Floor resettable chain hoist.
11. Electric Motor Operation: Provide electric operator as listed in the door UL file, for size as recommended by manufacturer to move door in either direction.
- a. Floor Resettable Electric Motor Operation.

b. Sensing Edge Protection:

**** NOTE TO SPECIFIER ** Select one of the following paragraphs and delete the one not required.**

- 1) Pneumatic sensing edge.
- 2) Electric sensing edge.
- 3) Monitored electric sensing edge for momentary contact controls.

c. Operator Controls:

**** NOTE TO SPECIFIER ** Select one of the following operation paragraphs and delete the one not required.**

- 1) Push-button operated control stations with open, close, and stop buttons.
- 2) Key operation with NEMA 1 interior, NEMA 4 exterior, surface and flush mounted open, close, and stop controls.

d. Special Operation:

**** NOTE TO SPECIFIER ** Select one of the following operation paragraphs and delete the one not required.**

- 1) Vehicle detector operation.
- 2) Radio control operation.
- 3) Card reader control.
- 4) Photocell operation.
- 5) Door timer operation.
- 6) Commercial light package.
- 7) Explosion and dust ignition proof control wiring.
- 8) Digital operation.

**** NOTE TO SPECIFIER ** Select one of the following paragraphs for Automatic Closure Standard Fire Door, Automatic Closure Fire Sentinel Release Device or manual locking operation and delete the ones not required.**

12. Automatic Closure Standard Fire Door: UL approved release mechanism equipped with a 165 degree fusible link.

- a. Doors will be equipped with chain hoist release mechanism, requiring only one sash chain to be routed to the operated side (sash chain not required to be routed to adjusting wheel side.)
 - 1) Release mechanism includes planetary gear differential system.
 - 2) Door will close by a thermally actuated link rated @165 degrees F, or by an optional listed releasing device, or by manually activating the release handle.
 - 3) All counterbalance spring tension shall be maintained when the release mechanism is activated.
 - 4) After closing by manual activation of the release handle, the door shall be able to be reset by one person from one side of the door (re-engaging the release handle). No tools are required to reset the release mechanism.
- b. Doors will be equipped with floor resettable electric motor operation system, requiring only one sash chain to be routed to the operated side (sash chain not required to be routed to adjusting wheel side.)
 - 1) Release mechanism includes planetary gear differential system.
 - 2) Door will close by a thermally actuated link rated @165 degrees F, or by an optional listed releasing device, or by manually activating the release handle.
 - 3) All counterbalance spring tension shall be maintained when the release mechanism is activated.
 - 4) After closing by alarm activation with power on the electric motor, the door shall be able to be reset by resetting the alarm system without additional tools required.

**** NOTE TO SPECIFIER ** Select the following optional accessory paragraph for Fire Sentinel model if required and delete if not required. Available for use with either motor or**

non-motor fire doors to allow interface with auxiliary fire protection devices to control the doors' closure.

- c. Fire Sentinel time-delay release mechanism provides an added measure of safety to control the doors' closure.
- 13. Governor: If required by the size for chain hoist doors, provide a viscous governor to regulate the rate of descent of door in a quiet manner. Use an engagement type that is not engaged during normal door operation, but after cable release, will retard the speed during automatic door closure to under 24 inches per second and not less than 6 inches per second per NFPA 80.
- 14. Locking:

**** NOTE TO SPECIFIER ** Select one of the following optional paragraphs and delete the ones not required.**

- a. Two interior bottom bar slide bolts for manually operated doors.
- b. Cylinder lock for manually operated doors.
- c. Interior slide bolt lock for electric operation with interlock switch.
- d. Cylinder lock for electric operation with interlock switch.

- 15. Wall Mounting Condition:

**** NOTE TO SPECIFIER ** Select one of the following two paragraphs and delete the one not required.**

- a. Face-of-wall mounting.
- b. Between jambs mounting.

B. Overhead Coiling Fire service Doors: FireKing Model 631 Fire Doors.

- 1. Label: Provide fire doors certified with the following listing.

**** NOTE TO SPECIFIER ** Select one or more of the following paragraphs to suit the projects requirements for the door size(s) required and delete the ones not required. Note that UL Labels are standard and FM labels are optional.**

- a. Rolling fire doors up to 152 sf (14.12 sm) and not exceeding 13 feet 6 inches (4.11 m) in width or height shall receive the UL 4-Hour Class A Label when face mounted to masonry opening.
- b. Rolling fire doors up to 152 sf (14.12 sm) and not exceeding 13 feet 6 inches (4.11 m) in width or height shall receive the UL 3-Hour Class A Label for installation on masonry or steel jamb walls, face mounted or between jambs. Door may be welded to the face of steel jambs.
- c. Rolling fire doors up to 152 sf (14.12 sm) and 13 feet 6 inches (4.11 m) in width or height shall receive the UL 1-1/2-Hour Class B Label for installation in non-masonry walls, face mounted or between jambs
- d. Rolling fire doors up to 152 sf (14.12 sm) and 13 feet 6 inches (4.11 m) in width or height shall receive the ULC 1-1/2-Hour Class B Label for installation in non-masonry walls, face mounted or between jamb.
- e. Rolling fire doors over 152 sf (14.12 sm) shall receive the UL Oversize Fire Door Label.

**** NOTE TO SPECIFIER ** Select the following paragraph as required for smoke protection and delete if not required.**

- f. Provide UL labeled smoke protection where indicated. Comply with UL label for "Leakage Rated Assembly" or "S" label.
 - 1) Comply with NFPA 105 air leakage requirements.
 - 2) Pass UL test procedure 1784.
- 2. Curtain: Interlocking roll-formed slats as specified following. Endlocks shall be attached to each end of alternate slats to prevent lateral movement.

**** NOTE TO SPECIFIER ** Select one of the following paragraphs for the door size and profile required and delete the ones not required.**

- a. Curved profile type C-187 for doors thru 14 feet (4.27 m) wide by 12 feet (3.65 m) high, fabricated of 24 gauge galvanized steel.
- b. Flat profile type F-265 for doors thru 14 feet (4.27 m) wide by 12 feet (3.65 m) high, fabricated of 24 gauge galvanized steel.

**** NOTE TO SPECIFIER ** Select the following paragraph if glazing is required and delete if not required. Note that glazing is available on flat profile slats only.**

3. Glazing: Fire-rated vision panels, four glazing panels 3 inch by 5/8 inch (76 by 16 mm).
4. Finish:

**** NOTE TO SPECIFIER ** Select the following paragraphs for the slat and hood materials required and delete the ones not required.**

- a. Galvanized Steel: Slats and hood galvanized steel to ASTM A 653 finished with a rust-inhibitive roll coating process, including bonderizing, a 0.2 mils thick baked prime paint, and a 0.6 mils thick baked top coat.

**** NOTE TO SPECIFIER ** Select one of the following two paragraphs for Polyester top coat or Powder top coat and delete the one not required. Polyester top coat is standard.**

- 1) Polyester Top Coat.
 - (a) Gray polyester.
 - (b) Tan polyester.
 - (c) White polyester.
 - (d) Brown polyester.
- 2) Powder coat: PowderGuard

**** NOTE TO SPECIFIER ** PowderGuard Premium weather resistant polyester powder coat available in 197 colors; custom color match and EZ Clean treatment options available. See Tiger Drylac RAL Colors* Brochure for color selection. PowderGuard Weathered Finish available in 11 color options, see PowderGuard Finish brochure for color selection.**

- (a) PowderGuard Premium: Weather resistant polyester powder coat color as selected by the Architect.
- (b) PowderGuard Weathered Finish: Industrial textured powder coat provides a thicker, more scratch resistant coat. Applied to entire door system including slats, guides, bottom bar and head plate.
- b. Non-galvanized exposed ferrous surfaces shall be black powder coated.
- c. Stainless Steel slats shall be finished as follows.

**** NOTE TO SPECIFIER ** Select one of the following two paragraphs and delete the one not required.**

- 1) Finish: 2B mill finish.
- 2) Finish: No. 4 satin finish.

**** NOTE TO SPECIFIER ** Select one of the following bottom bar paragraphs and delete the ones not required.**

5. Bottom Bar:
 - a. Two black powder coated structural steel angles 1-1/2 inch by 1-1/2 inch by 1/8 inch (38 mm by 38 mm by 3 mm) minimum.
 - b. Two structural steel angles with PowderGuard Zinc Finish 1-1/2 inch by 1-1/2 inch by 1/8 inch (38 mm by 38 mm by 3 mm) minimum.
 - c. Two galvanized steel angles with 1-1/2 inch by 1-1/2 inch by 1/8 inch (38 mm by 38 mm by 3 mm) minimum.
 - d. Two stainless steel angles 1-1/2 inch by 1-1/2 inch by 1/8 inch (38 mm by 38 mm by 3 mm) minimum.
6. Guides: Roll-formed steel shapes attached to continuous steel wall angle for doors through 12 feet (3.65 m) wide. Three structural steel angles with minimum thickness of 3/16 inch (5 mm) for doors over 12 feet (3.65 m) wide. Guides for between jamb doors shall be structural angles.

**** NOTE TO SPECIFIER ** Select one of the following two finish paragraphs and delete the one not required.**

- a. Finish: PowderGuard Weathered finish with iron/black powder.
- b. Finish: PowderGuard Zinc Finish for guides, bottom bar and head plate.

**** NOTE TO SPECIFIER ** Select one of the following fastening paragraphs to meet projects installation requirements and delete the one not required.**

- c. Fastening Guides to Masonry Fire Walls: UL listed for fire in accordance with manufacturer's listing.
 - d. Fastening Guides to Masonry Fire Walls: UL listed for fire and smoke in accordance with manufacturer's listing.
 - e. Fastening Guides to Non-Masonry Fire Walls: Comply with the manufacturer's listing.
7. Brackets: To support counterbalance, curtain and hood

**** NOTE TO SPECIFIER ** Select one of the following two paragraphs and delete the one not required.**

- a. Hot rolled steel with black powder coated finish.
 - b. Hot rolled steel with PowderGuard Zinc finish.
8. Counterbalance: Helical torsion spring type housed in a steel tube or pipe barrel, supporting the curtain with deflection limited to 0.03 inch per foot of span. Counterbalance is adjustable by means of an adjusting tension wheel.
9. Hood: 24 gauge galvanized primed steel. Provide one intermediate support bracket for wall openings over 13 feet 6 inches (4.11 m) wide.

**** NOTE TO SPECIFIER ** Select one of the following Operation paragraphs for manual operation or electric motor operation and delete the one not required.**

10. Manual Operation:

**** NOTE TO SPECIFIER ** Select one of the following manual operation paragraphs and delete the ones not required.**

- a. Manual push.
 - b. Crank operation.
 - c. Floor resettable chain hoist.
11. Electric Motor Operation: Provide electric operator as listed in the door UL file, for size as recommended by manufacturer to move door in either direction.
- a. Floor Resettable Electric Motor Operation.
 - b. Sensing Edge Protection:

**** NOTE TO SPECIFIER ** Select one of the following two paragraphs and delete the one not required.**

- 1) Pneumatic sensing edge.
 - 2) Electric sensing edge.
 - 3) Monitored electric sensing edge for momentary contact controls.
- c. Operator Controls:

**** NOTE TO SPECIFIER ** Select one of the following operation paragraphs and delete the one not required.**

- 1) Push-button control stations with open, close, and stop buttons.
 - 2) Key operation with NEMA 1 interior, NEMA 4 exterior, surface and flush mounted open, close, and stop controls.
- d. Special Operation:

**** NOTE TO SPECIFIER ** Select one of the following operation paragraphs and delete the one not required.**

- 1) Vehicle detector operation.
- 2) Radio control operation.
- 3) Card reader control.
- 4) Photocell operation.
- 5) Door timer operation.
- 6) Commercial light package.
- 7) Explosion and dust ignition proof control wiring.
- 8) Digital operation.

**** NOTE TO SPECIFIER ** Select one of the following paragraphs for manual operation or electric motor operation and delete the one not required.**

12. Automatic Closure Standard Fire Door: UL approved release mechanism equipped with a 165 degree fusible link.

- a. Doors will be equipped with chain hoist release mechanism, requiring only one sash chain to be routed to the operated side (sash chain not required to be routed to adjusting wheel side.)
 - 1) Release mechanism includes planetary gear differential system.
 - 2) Door will close by a thermally actuated link rated @165 degrees F, or by an optional listed releasing device, or by manually activating the release handle.
 - 3) All counterbalance spring tension shall be maintained when the release mechanism is activated.
 - 4) After closing by manual activation of the release handle, the door shall be able to be reset by one person from one side of the door (re-engaging the release handle). No tools shall be required to reset the release mechanism.
- b. Doors will be equipped with floor resettable electric motor operation system, requiring only one sash chain to be routed to the operated side (sash chain not required to be routed to adjusting wheel side.)
 - 1) Release mechanism includes planetary gear differential system.
 - 2) Door will close by a thermally actuated link rated @165 degrees F, or by an optional listed releasing device, or by manually activating the release handle.
 - 3) All counterbalance spring tension shall be maintained when the release mechanism is activated.
 - 4) After closing by manual activation of the release handle, the door shall be able to be reset by one person from one side of the door (re-engaging the release handle). No tools are required to reset the release mechanism.
 - 5) After closing by alarm activation with power on the electric motor, the door shall be able to be reset by resetting the alarm system without additional tools required.

**** NOTE TO SPECIFIER ** Select the following optional accessory paragraph for Fire Sentinel model if required and delete if not required. Available for use with either motor or non-motor fire doors to allow interface with auxiliary fire protection devices to control the doors' closure.**

- c. Fire Sentinel time-delay release mechanism provides an added measure of safety to control the doors' closure.
- 13. Governor: If required by the size for chain hoist doors, provide a viscous governor to regulate the rate of descent of door in a quiet manner. Use an engagement type that is not engaged during normal door operation, but after cable release, will retard the speed during automatic door closure to under 24 inches per second and not less than 6 inches per second per NFPA 80.
- 14. Locking:

**** NOTE TO SPECIFIER ** Select one of the following paragraphs and delete the ones not required.**

- a. Two interior bottom bar slide bolts for manually operated doors.
- b. Cylinder lock for manually operated doors.
- c. Interior slide bolt lock for electric operation with interlock switch.
- d. Cylinder lock for electric operation with interlock switch.
- 15. Wall Mounting Condition:

**** NOTE TO SPECIFIER ** Select one of the following two paragraphs and delete the one not required.**

- a. Face-of-wall mounting.
- b. Between jambs mounting.

- C. Overhead Coiling Fire service Doors: FireKing Model 634 Fire Doors.
 - 1. Label: Provide fire doors certified with the following listing.

***** NOTE TO SPECIFIER ** Select one or more of the following paragraphs to suit the projects requirements for the door size(s) required and delete the ones not required. Note that UL Labels are standard and FM labels are optional.**

- a. Rolling fire doors up to 152 sf (14.12 sm) and not exceeding 13 feet 6 inches (4.11 m) in width or height shall receive the UL 4-Hour Class A Label when face mounted to masonry opening.
- b. Rolling fire doors up to 144 sf (13.7 sm) and not exceeding 12 feet (3.7 m) in height or width shall receive the FM 4-Hour Class A Label for masonry or concrete walls or steel wall jambs.
- c. Rolling fire doors up to 152 sf (14.12 sm) and not exceeding 13 feet 6 inches (4.11 m) in width or height shall receive the UL 3-Hour Class A Label for installation on masonry or steel jamb walls, face mounted or between jambs. Door may be welded to the face of steel jambs.
- d. Rolling fire doors up to 152 sf (14.12 sm) and not exceeding 13 feet 6 inches (4.11 m) in width or height shall receive the ULC 3-Hour Class A Label for installation on masonry or steel jamb walls, face mounted or between jambs. Door may be welded to the face of steel jambs.
- e. Rolling fire doors up to 130 sf (12.1 m) and height not exceeding 11 feet (3.4 m) and width not exceeding 12 feet (3.7 m) shall receive the FM 3-Hour Class A Label for steel tubes set against fire walls (masonry or non-masonry construction).
- f. Rolling fire doors up to 152 sf (14.12 sm) and 13 feet 6 inches (4.11 m) in width or height shall receive the UL 1-1/2-Hour Class B Label for installation in non-masonry walls, face mounted or between jambs.
- g. Rolling fire doors up to 152 sf (14.12 sm) and 13 feet 6 inches (4.11 m) in width or height shall receive the ULC 1-1/2-Hour Class B Label for installation in non-masonry walls, face mounted or between jambs.
- h. Rolling fire doors up to 117 sf (13.4 sm) and not exceeding 11 feet (3.4 m) in height or width shall receive the FM 1-1/2-Hour Class B Label when installed on 2-hour fire-rated gypsum dry walls.
- i. Rolling fire doors over 152 sf (14.12 sm) shall receive the UL Oversize Fire Door Label for masonry/steel fire walls.
- j. Rolling fire doors over 152 sf (14.12 sm) and not exceeding 18 feet (5.49 m) in height or width shall receive the FM Oversize Fire Door Label. Doors over 18 ft (5.49 m) must be reviewed by FM.

**** NOTE TO SPECIFIER ** Select the following paragraph as required and delete if not required.**

- k. Provide UL labeled smoke protection where indicated. Comply with UL label for "Leakage Rated Assembly" or "S" label.
 - 1) Comply with NFPA 105 air leakage requirements.
 - 2) Pass UL test procedure 1784.
2. Curtain: Interlocking roll-formed slats as specified following. Endlocks shall be attached to each end of alternate slats to prevent lateral movement.

**** NOTE TO SPECIFIER ** Select one of the following paragraphs for the door size and profile required and delete the ones not required.**

- a. Curved profile type C-187 for doors thru 20 feet (6.10 m) wide by 25 feet 4 inches (7.72 m) high, fabricated of:

**** NOTE TO SPECIFIER ** Select one of the following paragraphs and delete the ones not required.**

- 1) 20 gauge galvanized steel.
- 2) 18 gauge galvanized steel.
- 3) 20 gauge stainless steel.
- 4) 18 gauge stainless steel.
- b. Curved profile type C-275 for doors thru 20 feet (6.10 m) wide by 25 feet 4 inches (7.72 m) high, fabricated of:

**** NOTE TO SPECIFIER ** Select one of the following paragraphs and delete the ones not required.**

- 1) 20 gauge galvanized steel.
 - 2) 18 gauge galvanized steel.
 - 3) 20 gauge stainless steel.
 - 4) 18 gauge stainless steel.
- c. Curved profile type C-275 for doors over 20 feet (6.10 m) thru 41 feet 2 inches (12.55 m) wide, fabricated of:

**** NOTE TO SPECIFIER ** Select one of the following paragraphs and delete the ones not required.**

- 1) 18 gauge galvanized steel.
 - 2) 16 gauge galvanized steel.
 - 3) 18 gauge stainless steel.
- d. Flat profile type F-265 for doors thru 20 feet (6.10 m) wide by 25 feet 4 inches (7.72 m) high, fabricated of:

**** NOTE TO SPECIFIER ** Select one of the following paragraphs and delete the one not required.**

- 1) 20 gauge galvanized steel.
 - 2) 18 gauge galvanized steel.
 - 3) 20 gauge stainless steel.
 - 4) 18 gauge stainless steel.
- e. Flat profile type F-265 for doors over 20 feet (6.10 m) by 41 feet 2 inches (12.55 m) wide, fabricated of 18 gauge galvanized steel.

**** NOTE TO SPECIFIER ** Select the following paragraph if glazing is required and delete if not required. Available on 4 hour, 3 hour, and 90 minute labeled doors with flat slat profile only.**

3. Glazing: Fire-rated vision panels, four glazing panels 3 inch by 5/8 inch (76 by 16 mm) with FireLite glazing.
4. Finish:

**** NOTE TO SPECIFIER ** Select the following paragraphs for the slat and hood materials required and delete the ones not required.**

- a. Galvanized Steel: Slats and hood galvanized steel to ASTM A 653 finished with a rust-inhibitive roll coating process, including bonderizing, a 0.2 mils thick baked prime paint, and a 0.6 mils thick baked top coat.

**** NOTE TO SPECIFIER ** Select one of the following two paragraphs for Polyester top coat or Powder top coat and delete the one not required. Polyester top coat is standard.**

- 1) Polyester Top Coat.
 - (a) Gray polyester.
 - (b) Tan polyester.
 - (c) White polyester.
 - (d) Brown polyester.
- 2) Powder coat: PowderGuard

**** NOTE TO SPECIFIER ** PowderGuard Premium weather resistant polyester powder coat available in 197 colors; custom color match and EZ Clean treatment options available. See Tiger Drylac RAL Colors* Brochure for color selection. PowderGuard Weathered Finish available in 11 color options, see PowderGuard Finish brochure for color selection.**

- (a) PowderGuard Premium: Weather resistant polyester powder coat color as selected by the Architect.
 - (b) PowderGuard Weathered Finish: Industrial textured powder coat provides a thicker, more scratch resistant coat. Applied to entire door system including slats, guides, bottom bar and head plate.
- b. Non-galvanized exposed ferrous surfaces shall black powder coated.
 - c. Stainless Steel: Slats shall be stainless steel finished as follows.

**** NOTE TO SPECIFIER ** Select one of the following two paragraphs and delete the one not required.**

- 1) Finish: 2B mill finish.
- 2) Finish: No. 4 satin finish.

**** NOTE TO SPECIFIER ** Select one of the following bottom bar paragraphs and delete the ones not required.**

5. Bottom Bar:
 - a. Two black powder coated structural steel angles 1-1/2 inch by 1-1/2 inch by 1/8 inch (38 mm by 38 mm by 3 mm) minimum.
 - b. Two structural steel angles with PowderGuard Zinc Finish 1-1/2 inch by 1-1/2 inch by 1/8 inch (38 mm by 38 mm by 3 mm) minimum.
 - c. Two galvanized steel angles with 1-1/2 inch by 1-1/2 inch by 1/8 inch (38 mm by 38 mm by 3 mm) minimum.
 - d. Two stainless steel angles 1-1/2 inch by 1-1/2 inch by 1/8 inch (38 mm by 38 mm by 3 mm) minimum.
6. Guides: Three structural steel angles with minimum thickness of 3/16 inch (5 mm) for doors over 12 feet (3.65 m) wide or high. Guides for between jamb doors shall be structural angles.

**** NOTE TO SPECIFIER ** Select one of the following two finish paragraphs and delete the one not required.**

- a. Finish: PowderGuard Weathered finish with iron/black powder.
- b. Finish: PowderGuard Zinc Finish for guides, bottom bar and head plate.

**** NOTE TO SPECIFIER ** Select one of the following fastening paragraphs to meet projects installation requirements and delete the one not required.**

- c. Fastening Guides to Masonry Fire Walls: UL listed for fire in accordance with manufacturer's listing.
- d. Fastening Guides to Masonry Fire Walls: UL listed for fire and smoke in accordance with manufacturer's listing.
- e. Fastening Guides to Non-Masonry Fire Walls: Comply with the manufacturer's listing.

7. Brackets: To support counterbalance, curtain and hood

**** NOTE TO SPECIFIER ** Select one of the following two paragraphs and delete the one not required.**

- a. Hot rolled steel with black powder coated finish.
 - b. Hot rolled steel with PowderGuard Zinc finish.
8. Counterbalance: Helical torsion spring type housed in a steel tube or pipe barrel, supporting the curtain with deflection limited to 0.03 inch per foot of span. Counterbalance is adjustable by means of an adjusting tension wheel.
 9. Hood:

**** NOTE TO SPECIFIER ** Select one of the following two paragraphs and delete the one not required. Add the last paragraph for optional FM labeled hoods only.**

- a. Fabricate of 24 gauge galvanized primed steel minimum for wall openings thru 19 feet (5.79 m) wide.
- b. Fabricate of 22 gauge galvanized primed steel for wall openings over 19 feet (5.79 m) wide.
- c. Hood equipped with thermally controlled, internal, galvanized steel flame baffle as required for FM listing.

**** NOTE TO SPECIFIER ** Select one of the following two paragraphs and delete the one not required.**

- d. Provide one intermediate support bracket for wall openings over 13 feet 6 inches (4.11 m) wide
- e. Provide two support brackets for wall openings over 19 feet (5.79 m) wide.

**** NOTE TO SPECIFIER ** Select one of the following Operation paragraphs for manual operation or electric motor operation and delete the one not required.**

10. Manual Operation:

**** NOTE TO SPECIFIER ** Select one of the following manual operation paragraphs and delete the ones not required.**

- a. Manual push.
 - b. Crank operation.
 - c. Floor resettable chain hoist.
11. Electric Motor Operation: Provide electric operator as listed in the door UL file, for size as recommended by manufacturer to move door in either direction.
- a. Floor Resettable Electric Motor Operation.
 - b. Sensing Edge Protection:

**** NOTE TO SPECIFIER ** Select one of the following two paragraphs and delete the one not required.**

- 1) Pneumatic sensing edge.
 - 2) Electric sensing edge.
 - 3) Monitored electric sensing edge for momentary contact controls.
- c. Operator Controls:

**** NOTE TO SPECIFIER ** Select one of the following operation paragraphs and delete the one not required.**

- 1) Push-button control stations with open, close, and stop buttons.
 - 2) Key operation with NEMA 1 interior, NEMA 4 exterior, surface and flush mounted open, close, and stop controls.
- d. Special Operation:

**** NOTE TO SPECIFIER ** Select one of the following operation paragraphs and delete the one not required.**

- 1) Vehicle detector operation.
- 2) Radio control operation.
- 3) Card reader control.
- 4) Photocell operation.
- 5) Door timer operation.
- 6) Commercial light package.
- 7) Explosion and dust ignition proof control wiring.
- 8) Digital operation.

**** NOTE TO SPECIFIER ** Select one of the following paragraphs for manual operation or electric motor operation and delete the one not required.**

12. Automatic Closure Standard Fire Door: UL approved release mechanism equipped with a 165 degree fusible link.
- a. Doors equipped with chain hoist release mechanism, requiring only one sash chain to be routed to the operated side (sash chain not required to be routed to adjusting wheel side.)
 - 1) Release mechanism includes planetary gear differential system.
 - 2) Door will close by a thermally actuated link rated @165 degrees F, or by an optional listed releasing device, or by manually activating the release handle.
 - 3) All counterbalance spring tension shall be maintained when the release mechanism is activated.
 - 4) After closing by manual activation of the release handle, the door shall be able to be reset by one person from one side of the door (re-engaging the release handle). No tools shall be required to reset the release mechanism.
 - b. Doors will be equipped with floor resettable electric motor operation system, requiring only one sash chain to be routed to the operated side (sash chain not required to be routed to adjusting wheel side.)
 - 1) Release mechanism includes planetary gear differential system.
 - 2) Door will close by a thermally actuated link rated @165 degrees F, or by an optional listed releasing device, or by manually activating the release handle.

- 3) All counterbalance spring tension shall be maintained when the release mechanism is activated.
- 4) After closing by manual activation of the release handle, the door shall be able to be reset by one person from one side of the door (re-engaging the release handle). No tools are required to reset the release mechanism.
- 5) After closing by alarm activation with power on the electric motor, the door shall be able to be reset by resetting the alarm system without additional tools required.

**** NOTE TO SPECIFIER ** Select the following optional accessory paragraph for Fire Sentinel model if required and delete if not required. Available for use with either motor or non-motor fire doors to allow interface with auxiliary fire protection devices to control the doors' closure.**

- c. Fire Sentinel time-delay release mechanism provides an added measure of safety to control the doors' closure.
13. Governor: If required by the size for chain hoist doors, provide a viscous governor to regulate the rate of descent of door in a quiet manner. Use an engagement type that is not engaged during normal door operation, but after cable release, will retard the speed during automatic door closure to under 24 inches per second and not less than 6 inches per second per NFPA 80.
14. Locking:

**** NOTE TO SPECIFIER ** Select one of the following optional paragraphs and delete the ones not required.**

- a. Two interior bottom bar slide bolts for manually operated doors.
- b. Cylinder lock for manually operated doors.
- c. Interior slide bolt lock for electric operation with interlock switch.
- d. Cylinder lock for electric operation with interlock switch.
15. Wall Mounting Condition: Face-of-wall mounting.

2.3 OVERHEAD COILING INSULATED FIRE DOORS

A. Overhead Coiling Fire service Doors: FireKing Model 635 Insulated Fire Doors.

1. Label: Provide fire doors certified with the following listing.

**** NOTE TO SPECIFIER ** Select one or more of the following paragraphs to suit the projects requirements for the door size(s) required and delete the ones not required. Note that UL Labels are standard and FM labels are optional.**

- a. Rolling fire doors up to 152 sf (14.12 sm) and not exceeding 13 feet 6 inches (4.11 m) in width or height shall receive the UL 4-Hour Class A Label when face mounted to masonry opening.
- b. Rolling fire doors up to 120 sf (11.4 sm) with the width of the opening not exceeding 12 feet (3.7 m) and height of the opening not exceeding 10 feet (3.0 m) shall receive the FM 4-Hour Class A Label for masonry or concrete walls or steel wall jambs.
- c. Rolling fire doors up to 152 sf (14.12 sm) and not exceeding 13 feet 6 inches (4.11 m) in width or height shall receive the UL 3-Hour Class A Label for installation on masonry or steel jamb walls, face mounted or between jambs. Door may be welded to the face of steel jambs.
- d. Rolling fire doors up to 120 sf (11.4 sm) with the width of the opening not exceeding 12 feet (3.7 m) and height of the opening not exceeding 10 feet (3.0 m) shall receive the FM 3-Hour Class A Label for steel tubes set against fire walls (masonry or non-masonry construction).
- e. Rolling fire doors up to 152 sf (14.12 sm) and 13 feet 6 inches (4.11 m) in width or height shall receive the UL 1-1/2-Hour Class B Label for installation in non-masonry walls, face mounted or between jambs.

- f. Rolling fire doors up to 152 sf (14.12 sm) and 13 feet 6 inches (4.11 m) in width or height shall receive the ULC 1-1/2-Hour Class B Label for installation in non-masonry walls, face mounted or between jambs
- g. Rolling fire doors up to 120 sf (11.4 sm) with the width of the opening not exceeding 12 feet (3.7 m) and height of the opening not exceeding 10 feet (3.0 m) shall receive the FM 1-1/2-Hour Class B Label when installed on dry wall jambs.

**** NOTE TO SPECIFIER ** Select the following paragraphs for UL Label and delete if not applicable.**

- h. Rolling fire doors over 152 sf (14.12 sm) shall receive the UL Oversize Fire Door Label.

**** NOTE TO SPECIFIER ** Select the following paragraphs for optional FM Label and delete if not applicable.**

- i. Rolling fire doors over 152 sf (14.12 sm) and not exceeding 18 feet (5.49 m) in height or width shall receive the FM Label for Oversize Fire Doors. Doors over 18 ft (5.49 m) must be reviewed by FM.

**** NOTE TO SPECIFIER ** Select the following paragraphs as required and delete if not required.**

- j. Provide UL labeled smoke protection where indicated. Comply with with UL label for "Leakage Rated Assembly" or "S" label.
 - 1) Comply with NFPA 105 air leakage requirements.
 - 2) Pass UL test procedure 1784.
- 2. Curtain: Interlocking roll-formed slats. Windlocks shall be attached to each end of alternate slats to prevent lateral movement.
 - a. Flat profile type F-265 with back cover and mineral wool filling internal space. For doors thru 24 feet (7.32 m) high and 24 feet (7.32 m) wide, fabricated of:

**** NOTE TO SPECIFIER ** Select one of the following paragraphs and delete the ones not required.**

- 1) 24 gauge galvanized steel.
 - 2) 22 gauge galvanized steel.
 - 3) 24 gauge stainless steel.
 - 4) 22 gauge stainless steel.
- b. R-Value: 4.5.
- c. STC (Sound Transmission Class).
 - 1) Door Assembly 17
 - 2) Door Assembly with brush seals 18
 - 3) Curtain Only 21
- 3. Finish:

**** NOTE TO SPECIFIER ** Select the following paragraphs for the slat and hood materials required and delete the ones not required.**

- a. Galvanized Steel: Slat and hood galvanized steel to ASTM A 653 finished with a rust-inhibitive roll coating process, including bonderizing, a 0.2 mils thick baked prime paint, and a 0.6 mils thick baked top coat.

**** NOTE TO SPECIFIER ** Select one of the following two paragraphs for Polyester top coat or Powder top coat and delete the one not required. Polyester top coat is standard.**

- 1) Polyester Top Coat.
 - (a) Gray polyester.
 - (b) Tan polyester.
 - (c) White polyester.
 - (d) Brown polyester.
- 2) Powder coat: PowderGuard

**** NOTE TO SPECIFIER ** PowderGuard Premium weather resistant polyester powder coat available in 197 colors; custom color match and EZ Clean treatment options available. See Tiger Drylac RAL Colors* Brochure for color selection. PowderGuard Weathered Finish available in 11 color options, see PowderGuard Finish brochure for color selection.**

- (a) PowderGuard Premium: Weather resistant polyester powder coat color as selected by the Architect.
- (b) PowderGuard Weathered Finish: Industrial textured powder coat provides a thicker, more scratch resistant coat. Applied to entire door system including slats, guides, bottom bar and head plate.

b. Stainless Steel: Slats shall be stainless steel finished as follows.

**** NOTE TO SPECIFIER ** Select one of the following two paragraphs and delete the one not required.**

- 1) Finish: 2B mill finish.
- 2) Finish: No. 4 satin finish.
- c. Non-galvanized exposed ferrous surfaces shall receive one coat of black powder coat.
- 4. Bottom Bar:
 - a. Two structural steel angles 1-1/2 inch by 1-1/2 inch by 1/8 inch (38 mm by 38 mm by 3 mm) minimum.
 - b. Two structural steel angles with PowderGuard Zinc Finish 1-1/2 inch by 1-1/2 inch by 1/8 inch (38 mm by 38 mm by 3 mm) minimum.
 - c. Two galvanized steel angles with 1-1/2 inch by 1-1/2 inch by 1/8 inch (38 mm by 38 mm by 3 mm) minimum.
 - d. Provide sloping bottom bar within UL limits.
- 5. Guides: Three structural steel or stainless steel angles with minimum thickness of 1/4 inch (6 mm) mounted to the face of the jamb. Guides also include locking bar or wind bar.

**** NOTE TO SPECIFIER ** Select one of the following two finish paragraphs and delete the one not required.**

- a. Finish: PowderGuard Weathered finish with iron/black powder.
- b. Finish: PowderGuard Zinc Finish for guides, bottom bar and head plate.

**** NOTE TO SPECIFIER ** Select one of the following fastening paragraphs to meet projects installation requirements and delete the one not required.**

- c. Fastening Guides to Masonry Fire Walls: UL listed for fire in accordance with manufacturer's listing.
- d. Fastening Guides to Masonry Fire Walls: UL listed for fire and smoke in accordance with manufacturer's listing.
- e. Fastening Guides to Non-Masonry Fire Walls: Comply with the manufacturer's listing.

6. Brackets:

**** NOTE TO SPECIFIER ** Select one of the following two paragraphs and delete the one not required.**

- a. Hot rolled steel with black powder coated finish.
- b. Hot rolled steel with PowderGuard Zinc finish.
- 7. Counterbalance: Helical torsion spring type housed in a steel tube or pipe barrel, supporting the curtain with deflection limited to 0.03 inch per foot of span. Counterbalance is adjustable by means of an adjusting tension wheel.
- 8. Hood:

**** NOTE TO SPECIFIER ** Select one of the following two paragraphs and delete the one not required. Add the last paragraph for optional FM labeled hoods only.**

- a. Fabricate of 24 gauge galvanized primed steel minimum for wall openings thru 19 feet (5.79 m) wide.
- b. Fabricate of 22 gauge galvanized primed steel for wall openings over 19 feet (5.79 m) wide.
- c. Hood equipped with thermally controlled, internal, galvanized steel flame baffle as required for FM listing.

**** NOTE TO SPECIFIER ** Select one of the following two paragraphs and delete the one not required.**

- d. Provide one intermediate support bracket for wall openings over 13 feet 6 inches (4.11 m) wide
- e. Provide two support brackets for wall openings over 19 feet (5.79 m) wide.

**** NOTE TO SPECIFIER ** Select one of the following Operation paragraphs for manual operation or electric motor operation and delete the one not required.**

- 9. Manual Operation:

**** NOTE TO SPECIFIER ** Select one of the following manual operation paragraphs and delete the ones not required.**

- a. Crank operation.
- b. Floor resettable chain hoist.
- 10. Electric Motor Operation: Provide electric operator as listed in the door UL file, for size as recommended by manufacturer to move door in either direction.
 - a. Floor Resettable Electric Motor Operation.
 - b. Sensing Edge Protection:

**** NOTE TO SPECIFIER ** Select one of the following two paragraphs and delete the one not required.**

- 1) Pneumatic sensing edge.
- 2) Electric sensing edge.
- 3) Monitored electric sensing edge for momentary contact controls.
- c. Operator Controls:

**** NOTE TO SPECIFIER ** Select one of the following operation paragraphs and delete the one not required.**

- 1) Push-button operated control stations with open, close, and stop buttons.
- 2) Key operation with NEMA 1 interior, NEMA 4 exterior, surface and flush mounted open, close, and stop controls.
- d. Special Operation:

**** NOTE TO SPECIFIER ** Select one of the following operation paragraphs and delete the one not required.**

- 1) Vehicle detector operation.
- 2) Radio control operation.
- 3) Card reader control.
- 4) Photocell operation.
- 5) Door timer operation.
- 6) Commercial light package.
- 7) Explosion and dust ignition proof control wiring.
- 8) Digital operation.

**** NOTE TO SPECIFIER ** Select one of the following paragraphs for manual operation or electric motor operation and delete the one not required.**

- 11. Automatic Closure Standard Fire Door: UL approved release mechanism equipped with a 165 degree fusible link.
 - a. Doors equipped with chain hoist release mechanism, requiring only one sash chain to be routed to the operated side (sash chain not required to be routed to adjusting wheel side.)
 - 1) Release mechanism includes planetary gear differential system.
 - 2) Door will close by a thermally actuated link rated @165 degrees F, or by an optional listed releasing device, or by manually activating the release handle.
 - 3) All counterbalance spring tension shall be maintained when the release mechanism is activated.
 - 4) After closing release handle manually, the door shall be able to be reset by one person from one side of the door (re-engaging the release handle). No tools shall be required to reset the release mechanism.

- b. Doors will be equipped with floor resettable electric motor operation system, requiring only one sash chain to be routed to the operated side (sash chain not required to be routed to adjusting wheel side.)
 - 1) Release mechanism includes planetary gear differential system.
 - 2) Door will close by a thermally actuated link rated @165 degrees F, or by an optional listed releasing device, or by manually activating the release handle.
 - 3) All counterbalance spring tension shall be maintained when the release mechanism is activated.
 - 4) After closing by manual activation of the release handle, the door shall be able to be reset by one person from one side of the door (re-engaging the release handle). No tools are required to reset the release mechanism.
 - 5) After closing by alarm activation with power on the electric motor, the door shall be able to be reset by resetting the alarm system without additional tools required.

**** NOTE TO SPECIFIER ** Select the following optional accessory paragraph for Fire Sentinel model if required and delete if not required. Available for use with either motor or non-motor fire doors to allow interface with auxiliary fire protection devices to control the doors' closure.**

- c. Fire Sentinel time-delay release mechanism provides an added measure of safety to control the doors' closure.
- 12. Governor: If required by size of chain hoist doors, provide a viscous governor to regulate the rate of descent of the door in a quiet manner. Use an engagement type that is not engaged during normal door operation, but after cable release, will retard the speed during automatic door closure to under 24 inches per second and not less than 6 inches per second per NFPA 80.
- 13. Locking:

**** NOTE TO SPECIFIER ** Select one of the following optional paragraphs and delete the ones not required.**

- a. Two interior bottom bar slide bolts for manually operated doors.
- b. Cylinder lock for manually operated doors.
- c. Interior slide bolt lock for electric operation with interlock switch.
- d. Cylinder lock for electric operation with interlock switch.
- 14. Wall Mounting Condition:

**** NOTE TO SPECIFIER ** Select one of the following paragraphs and delete the one not required.**

- a. Face-of-wall mounting.
- b. Between jambs mounting.

2.4 OVERHEAD COILING COUNTER FIRE DOORS

A. Overhead Coiling Counter Fire Doors: Model 640 Counter Fire Doors.

- 1. Label: Provide rolling fire doors certified with the following listing.

**** NOTE TO SPECIFIER ** Select one or more of the following paragraphs to suit the projects requirements for the door size(s) required and delete the ones not required. Note that UL Labels are standard and FM labels are optional.**

- a. UL 3-Hour Class A Label for installation on masonry or steel jamb walls (face mounted). Door may be welded to the face of steel jambs.
- b. ULC 3-Hour Class A Label for installation on masonry or steel jamb walls (face mounted). Door may be welded to the face of steel jambs.
- c. FM 3-Hour Class A Label for masonry or concrete walls, steel wall jambs or with steel tubes set against fire walls (masonry or non-masonry construction) .
- d. UL 1-1/2-Hour Class B Label for installation in non-masonry walls, face mounted or between jambs.

- e. FM 1-1/2-Hour Class B Label when installed on 2-hour fire-rated gypsum dry walls.
- 2. Curtain: Interlocking slats, Type F-158 fabricated of 22 gauge galvanized steel. Endlocks shall be attached to ends of alternate slats to maintain curtain alignment and prevent lateral slat movement.

**** NOTE TO SPECIFIER ** Select the following paragraph if glazing is required and delete if not required.**

- 3. Glazing: Fire-rated vision panels, four panels 3 inch by 5/8 inch (76 by 16 mm).
- 4. Finish:

**** NOTE TO SPECIFIER ** Select the following paragraphs for the slat and hood materials required and delete the ones not required.**

- a. Galvanized Steel: Slats and hood galvanized steel to ASTM A 653 finished with a rust-inhibitive roll coating process, including bonderizing, a 0.2 mils thick baked prime paint, and a 0.6 mils thick baked top coat.

**** NOTE TO SPECIFIER ** Select one of the following two paragraphs for Polyester top coat or Powder top coat and delete the one not required. Polyester top coat is standard.**

- 1) Polyester Top Coat.
 - (a) Gray polyester.
 - (b) Tan polyester.
 - (c) White polyester.
 - (d) Brown polyester.
- 2) Powder coat: PowderGuard

**** NOTE TO SPECIFIER ** PowderGuard Premium weather resistant polyester powder coat available in 197 colors; custom color match and EZ Clean treatment options available. See Tiger Drylac RAL Colors* Brochure for color selection. PowderGuard Weathered Finish available in 11 color options, see PowderGuard Finish brochure for color selection.**

- (a) PowderGuard Premium: Weather resistant polyester powder coat color as selected by the Architect.
- (b) PowderGuard Weathered Finish: Industrial textured powder coat provides a thicker, more scratch resistant coat. Applied to entire door system including slats, guides, bottom bar and head plate.

- b. Non-galvanized exposed ferrous surfaces shall be black powder coated.

- 5. Bottom Bar:

**** NOTE TO SPECIFIER ** Select one of the following paragraphs and delete the ones not required.**

- a. Single black powder coated steel angle bottom bar.
- b. Single black powder coated steel angle bottom bar with 1/4 inch (6 mm) foam astragal.
- c. Tubular locking bottom bar.

- 6. Guides:

**** NOTE TO SPECIFIER ** Select one of the following paragraphs and delete the one not required.**

- a. Roll-formed black powder coated steel shapes.
- b. Roll-formed black powder coated steel with brush smoke seals.

**** NOTE TO SPECIFIER ** Select one of the following two finish paragraphs and delete the one not required.**

- c. Finish: PowderGuard Weathered finish with iron/black powder.
- d. Finish: PowderGuard Zinc Finish for guides, bottom bar and head plate.

**** NOTE TO SPECIFIER ** Select one of the following paragraphs and delete the one not required.**

- e. Fastening Guides to Masonry Fire Walls: UL listed expansion anchors, or by through-bolts on soft brick or hollow block walls, or by bolts on steel jambs.
- f. Fastening Guides to Non-Masonry Fire Walls: Comply with the manufacturer's listing.
- 7. Brackets: Black powder coated steel to support counterbalance, curtain and hood.
- 8. Counterbalance: Helical torsion spring type. Counterbalance shall be housed in a steel tube or pipe barrel.
- 9. Hood:

**** NOTE TO SPECIFIER ** Select one of the following paragraphs and delete the one not required.**

- a. Galvanized painted steel. Hood support provided for wall openings over 13 feet 6 inch (4.11 m) wide.
- b. FM approved hood shall be equipped with thermally controlled, internal flame baffle.

**** NOTE TO SPECIFIER ** Select the following optional paragraph if required and delete if not required.**

- c. Provide with exterior UL Listed, brush smoke seal.

**** NOTE TO SPECIFIER ** Select one of the following Operation paragraphs for manual operation and delete the one not required.**

- 10. Manual Operation:

**** NOTE TO SPECIFIER ** Select one of the following manual operation paragraphs and delete the ones not required.**

- a. Manual push.
- b. Crank operation.
- 11. Automatic Closure:
 - a. Standard Fire Door: UL approved release mechanism equipped with a 165 degree fusible link.

**** NOTE TO SPECIFIER ** Select the following optional accessory paragraph for Fire Sentinel model if required and delete if not required.**

- b. Fire Sentinel time-delay release mechanism provides an added measure of safety to control the doors' closure.

- 12. Locking:

**** NOTE TO SPECIFIER ** Select one of the following optional paragraphs and delete the ones not required.**

- a. Two interior bottom bar slide bolts for manually operated doors.
- b. Cylinder lock for manually operated doors.
- c. Interior slide bolt lock for electric operation with interlock switch.
- d. Cylinder lock for electric operation with interlock switch.

- 13. Wall Mounting Condition:

**** NOTE TO SPECIFIER ** Select one of the following two paragraphs and delete the one not required.**

- a. Face-of-wall mounting.
- b. Between jambs mounting.

**** NOTE TO SPECIFIER ** The following laminated countertop paragraphs are optional. delete if not required.**

- 14. Plastic Laminated Fire Rated Countertops: Provide counter fire doors with Overhead Door Corporation plastic laminated fire rated countertops.
 - a. Label: Plastic laminated fire rated countertops shall bear Warnock Hersey International 1-1/2 hour label for countertops up to 8 feet by 4 feet (2.44 m by 1.22 m). Sizes over 8 feet by 4 feet (2.44 m by 1.22 m) will bear an Warnock Hersey International Oversize Label.
 - b. Shape: Provide shape as indicated on the Drawings. To include: I or T copable for face mounted doors; Rectangular H (no cope), I or T

capable for between mounted doors. No aprons or additional pieces shall be allowed.

- c. Core: Interior core of Georgia Pacific Firestop composite and high density particleboard.
- d. Finish: Top, bottom and all edges shall be covered with plastic laminate.
- e. Color: Top and all edges as selected by the Architect from any color from Formica, Wilsonart or Nevamar brands of plastic laminate.
- f. Mounting Hardware: Provide with all necessary mounting hardware.

B. Overhead Coiling Counter Fire Doors: Model 641 Counter Fire Doors.

- 1. Label: Provide rolling fire doors certified with the following listing.

**** NOTE TO SPECIFIER ** Select one or more of the following paragraphs to suit the projects requirements for the door size(s) required and delete the ones not required. Note that UL Labels are standard and FM labels are optional.**

- a. UL 3-Hour Class A Label for installation on masonry or steel jamb walls (face mounted). Door may be welded to the face of steel jambs.
 - b. ULC 3-Hour Class A Label for installation on masonry or steel jamb walls (face mounted). Door may be welded to the face of steel jambs.
 - c. FM 3-Hour Class A Label for masonry or concrete walls, steel wall jambs or with steel tubes set against fire walls (masonry or non-masonry construction).
 - d. UL 1-1/2-Hour Class B Label for installation in non-masonry walls, face mounted or between jambs. ULC 1-1/2-Hour Class B Label for installation in non-masonry walls, face mounted or between jambs.
 - e. FM 1-1/2-Hour Class B Label when installed on 2-hour fire-rated gypsum dry walls.
- 2. Curtain: Interlocking slats, Type F-158 fabricated of 22 gauge stainless steel. Endlocks shall be attached to ends of alternate slats to maintain curtain alignment and prevent lateral slat movement.

**** NOTE TO SPECIFIER ** Select the following paragraph if glazing is required and delete if not required.**

- 3. Glazing: Fire-rated vision panels, four panels 3 inch by 5/8 inch (76 by 16 mm).
- 4. Finish: Slats and hood shall be stainless steel with No. 4 satin finish.
- 5. Bottom Bar:

**** NOTE TO SPECIFIER ** Select one of the following paragraphs and delete the ones not required.**

- a. Single stainless steel angle bottom bar.
 - b. Single stainless steel angle bottom bar with 1/4 inch (6 mm) foam astragal.
 - c. Tubular locking bottom bar.
- 6. Guides:

**** NOTE TO SPECIFIER ** Select one of the following paragraphs and delete the one not required.**

- a. Stainless steel shapes.
- b. Stainless steel shapes with brush smoke seals.

**** NOTE TO SPECIFIER ** Select one of the following paragraphs and delete the one not required.**

- c. Fastening Guides to Masonry Fire Walls: UL listed expansion anchors, or by through-bolts on soft brick or hollow block walls, or by bolts on steel jambs.
 - d. Fastening Guides to Non-Masonry Fire Walls: Comply with the manufacturer's listing.
- 7. Brackets: Black powder coated steel to support counterbalance, curtain and hood.

8. Counterbalance: Helical torsion spring type. Counterbalance shall be housed in a steel tube or pipe barrel.
9. Hood:

**** NOTE TO SPECIFIER ** Select one of the following paragraphs and delete the one not required.**

- a. Galvanized painted steel. Hood support provided for wall openings over 13 feet 6 inch (4.11 m) wide.
- b. FM approved hood shall be equipped with thermally controlled, internal flame baffle.

**** NOTE TO SPECIFIER ** Select the following optional paragraph if required and delete if not required.**

- c. Provide with UL Listed exterior brush smoke seal.

**** NOTE TO SPECIFIER ** Select one of the following Operation paragraphs for manual operation or electric motor operation and delete the one not required.**

10. Manual Operation:

**** NOTE TO SPECIFIER ** Select one of the following manual operation paragraphs and delete the ones not required.**

- a. Manual push.
- b. Crank operation.

11. Electric Motor Operation: Provide electric operator as listed in the door UL file, for size as recommended by manufacturer to move door in either direction.

**** NOTE TO SPECIFIER ** Select following paragraphs if required and delete if not required.**

- a. Sensing Edge Protection:

**** NOTE TO SPECIFIER ** Select one of the following two paragraphs and delete the one not required.**

- 1) Electric sensing edge.
- 2) Monitored electric sensing edge for momentary contact controls.

- b. Operator Controls:

**** NOTE TO SPECIFIER ** Select one of the following operation paragraphs and delete the one not required.**

- 1) Push-button operated control stations with open, close, and stop buttons.
- 2) Key operation with NEMA 1 interior, NEMA 4 exterior, surface and flush mounted open, close, and stop controls.

**** NOTE TO SPECIFIER ** Select one of the following location paragraphs and delete the one not required.**

- 3) Controls for interior location.
- 4) Controls for exterior location.
- 5) Controls for both interior and exterior location.

**** NOTE TO SPECIFIER ** Select one of the following two paragraphs and delete the one not required.**

- 6) Controls surface mounted.
- 7) Controls flush mounted.

**** NOTE TO SPECIFIER ** Select one of the following paragraphs for standard fire door manual operation or fire sentinel for electric motor operation and delete the one not required.**

12. Automatic Closure:

- a. Standard Fire Door: UL approved release mechanism equipped with a 165 degree fusible link.

**** NOTE TO SPECIFIER ** Select the following optional accessory paragraph for Fire Sentinel model if required and delete if not required. Available for use with either motor or non-motor fire doors to allow interface with auxiliary fire protection devices to control the doors' closure.**

- b. Fire Sentinel time-delay release mechanism provides an added measure of safety to control the doors' closure.

13. Locking:

**** NOTE TO SPECIFIER ** Select one of the following paragraphs and delete the ones not required.**

- a. Two interior bottom bar slides bolt for manually operated doors.
- b. Cylinder lock for manually operated doors.
- c. Interior slide bolt lock for electric operation with interlock switch.
- d. Cylinder lock for electric operation with interlock switch.

14. Wall Mounting Condition:

**** NOTE TO SPECIFIER ** Select one of the following two paragraphs and delete the one not required.**

- a. Face-of-wall mounting.
- b. Between jambs mounting.

**** NOTE TO SPECIFIER ** The following laminated countertop paragraphs are optional. delete if not required.**

15. Plastic Laminated Fire Rated Countertops: Provide counter fire doors with plastic laminated fire rated countertops.
- a. Label: Plastic laminated fire rated countertops shall bear Warnock Hersey International 1-1/2 hour label for countertops up to 8 feet by 4 feet (2.44 m by 1.22 m). Sizes over 8 feet by 4 feet (2.44 m by 1.22 m) will bear an Warnock Hersey International Oversize Label.
 - b. Shape: Provide shape as indicated on the Drawings. To include: I or T copable for face mounted doors; Rectangular H (no cope), I or T copable for between mounted doors. No aprons or additional pieces shall be allowed.
 - c. Core: Interior core of Georgia Pacific Firestop composite and high density particleboard.
 - d. Finish: Top, bottom and all edges shall be covered with plastic laminate.
 - e. Color: Top and all edges as selected by the Architect from any color from Formica, Wilsonart or Nevamar brands of plastic laminate.
 - f. Mounting Hardware: Provide with all necessary mounting hardware.

2.5 OVERHEAD COILING COUNTER FIRE DOORS WITH INTEGRAL FRAMES

A. Overhead Coiling Counter Fire Doors with Integral Frames: Model 660 Integral Frame Fire-Rated Counter Doors.

- 1. Label: Rolling fire doors shall bear the UL 1-1/2 Hour Class B label for masonry or non-masonry fire walls.
- 2. Curtain: Interlocking roll-formed 22 gauge #4 stainless steel, flat profile slats with endlocks for curtain alignment and single bottom bar.
- 3. Integral Frame and Guides: 16 gauge #4 stainless steel.
- 4. Sill: 14 gauge #4 stainless steel sill enclosed with fireproof acoustic filler.
- 5. Hood: Stainless steel with a #4 finish.
- 6. Finish:
 - a. Non-galvanized exposed ferrous surfaces shall receive one coat of rust-inhibitive primer.
- 7. Bottom Bar: Stainless steel with a #4 finish.

**** NOTE TO SPECIFIER ** The following smoke seal paragraph is optional. Delete if not required.**

- a. Smoke seal.
- 8. Brackets: Minimum 12 gauge steel.
- 9. Counterbalance: Helical torsion spring type. Counterbalance housed in a steel tube or pipe barrel, supporting the curtain with deflection limited to 0.03 inches per foot of span. Counterbalance is adjustable by means of an adjusting tension wheel.
- 10. Operation:

**** NOTE TO SPECIFIER ** Select one of the following two paragraphs and delete the one not required. Manual push up operation is standard.**

- a. Manual push up operation.
 - b. Crank operation.
11. Locking:

**** NOTE TO SPECIFIER ** Select one of the following two paragraphs and delete the one not required.**

- a. Interior slide bolts.
 - b. Cylinder lock.
12. Mounting: Between jambs.

B. Overhead Coiling Counter Fire Doors with Integral Frames: Model 662 Integral Frame Fire-Rated Counter Doors.

1. Label: Rolling fire doors shall bear the UL 1-1/2 Hour Class B label for masonry or non-masonry fire walls.
2. Curtain: Interlocking roll-formed 22 gauge galvanized steel with baked-on polyester finish in gray, flat profile slats with endlocks for curtain alignment and double angle bottom bar.
3. Integral Frame and Guides: 16 gauge stainless steel with a #4 finish.
4. Hood: Stainless steel with a #4 finish.
5. Finish:
 - a. Non-galvanized exposed ferrous surfaces shall receive one coat of rust-inhibitive primer.
6. Sill: 14 gauge #4 stainless steel sill enclosed with fireproof acoustic filler.
7. Bottom Bar: Stainless steel with a #4 finish.

**** NOTE TO SPECIFIER ** The following smoke seal paragraph is optional. Delete if not required.**

- a. Smoke seal.
8. Brackets: Minimum 12 gauge steel, primed.
9. Counterbalance: Helical torsion spring type. Counterbalance housed in a steel tube or pipe barrel, supporting the curtain with deflection limited to 0.03 inches per foot of span. Counterbalance is adjustable by means of an adjusting tension wheel.
10. Operation:

**** NOTE TO SPECIFIER ** Select one of the following two paragraphs and delete the one not required. Manual push up operation is standard.**

- a. Manual push up operation.
 - b. Crank operation.
11. Locking:

**** NOTE TO SPECIFIER ** Select one of the following two paragraphs and delete the one not required.**

- a. Interior slide bolts.
 - b. Cylinder lock.
12. Mounting: Between jambs.

**** NOTE TO SPECIFIER ** Select the Fire Sentinel Release device(s) required from the following paragraphs. Coordinate the selection with Motorized or Manual Non-Motorized Fire doors specified above specified to include Fire Sentinel Time Delay Release. Delete the devices not required.**

2.6 FIRE SENTINEL TIME-DELAY RELEASE

- A. Model FSAX24V Release Device: For non-motorized doors with voltage input of 24VDC.

1. Voltage of 24VDC supplied by a UL 1481 regulated power supply with a battery backup system with a red, enclosure-mounted LED to indicate power to the device.
2. Capable of holding and releasing up to a 40 lb. load imposed by a fusible link/sash chain assembly attached to a release mechanism within the door construction.
3. Includes DIP-switch selectable delay settings of 10, 20, or 60 seconds upon alarm activation to allow for passageway clearance before initiating door closure.

**** NOTE TO SPECIFIER ** Contact manufacturer for list of compatible smoke or heat detectors.**

4. Capable of receiving an alarm input from compatible 2-wire normally open smoke detectors, 4-wire normally open smoke detectors, or normally open heat detectors, or input from a fire alarm control panel via a relay module providing a Form C dry contact output to the release device.
 - a. Capable of receiving input from a maximum of two smoke detectors.
 - b. Use with a supervisory resistor on 2-wire; End-of-Line relay on 4-wire to ensure the integrity of the wiring.

**** NOTE TO SPECIFIER ** The following paragraph is optional for use with non-tension doors with motor operation that also uses the optional audible and visual signaling. Delete if not required.**

5. Provide with optional audible and visual signaling appliances to operate during the alarm closing cycle. Device shall be capable of activating and powering a maximum of two audible/visible notification devices, e.g. strobes, horns or horn/strobes. Device shall recognize that the door is in the closed position via input received from a proximity switch, located underneath the door and activated when the door is in the closed position and resting upon the switch, to prevent accidental release of the fusible link/sash chain (or 1/16th cable) assembly; an amber, enclosure-mounted LED shall indicate activation of the proximity switch.
6. Provide with relay and trouble outputs to provide notification to a fire alarm control panel when an alarm or trouble state exists.
7. Circuit board shall have diagnostic LEDs to assist with field installation by indicating alarm or trouble conditions present within the smoke detector loops, as well as activation of the proximity switch.
8. Includes an enclosure-mounted test switch that simulates an alarm condition when depressed and held for a length of time equal to the DIP-switch selectable delay setting, either 10, 20, or 60 seconds. A remote key test switch is also provided to simulate an alarm condition during testing procedures.

B. Model FSBX24V Release Device with Battery Back-Up: For non-motorized doors with voltage input of 24VDC.

1. Capable of holding and releasing up to a 40 lb. load imposed by a fusible link/sash chain assembly attached to a release mechanism within the door construction.
2. Provide with an internal battery backup system capable of providing up to 24 hours of battery power to support alarm logic, smoke detector, release capability and audible and visible signaling appliances. Device shall monitor battery charge and annunciate the need for battery replacement via an integral sounder; a green, enclosure-mounted LED that indicates the presence of the battery backup system.
 - a. Battery backup/power system shall contain a management system providing trickle charge capabilities.

- b. During a power outage, and upon depletion of the battery, the device will initiate door closure by releasing the fusible link/sash chain assembly and initiating gravity closure of the door.
 - c. A DIP-switch selectable feature shall provide the capability of operating on battery power upon loss of line power or closing the door through the release of the fusible link assembly initiating gravity closure of the door
3. Includes DIP-switch selectable delay settings of 10, 20, or 60 seconds upon alarm activation to allow for passageway clearance before initiating door closure.

**** NOTE TO SPECIFIER ** Contact manufacturer for list of compatible smoke or heat detectors.**

4. Capable of receiving an alarm input from compatible 2-wire normally open smoke detectors, 4-wire normally open smoke detectors, or normally open heat detectors, or input from a fire alarm control panel via a relay module providing a Form C dry contact output to the release device.
- a. Capable of receiving input from a maximum of two smoke detectors.
 - b. Use with an End-of-Line (EOL) device to ensure the integrity of the wiring

**** NOTE TO SPECIFIER ** The following paragraph is optional for use with non-tension doors with motor operation that also uses the optional audible and visual signaling. Delete if not required.**

5. Provide with optional audible and visual signaling appliances to operate during the alarm closing cycle. Device shall be capable of activating and powering a maximum of two audible/visible notification devices, e.g. strobes, horns or horn/strobes. Device shall recognize that the door is in the closed position via input received from a proximity switch, located underneath the door and activated when the door is in the closed position and resting upon the switch, to prevent accidental release of the fusible link/sash chain (or 1/16th cable) assembly; an amber, enclosure-mounted LED shall indicate activation of the proximity switch.
6. Provide with relay and trouble outputs to provide notification to a fire alarm control panel when an alarm or trouble state exists.
7. Circuit board shall have diagnostic LEDs to assist with field installation by indicating alarm or trouble conditions present within the smoke detector loops, as well as activation of the proximity switch.
8. Includes an enclosure-mounted test switch that simulates an alarm condition when depressed and held for a length of time equal to the DIP-switch selectable delay setting, either 10, 20, or 60 seconds. A remote key test switch is also provided to simulate an alarm condition during testing procedures.
- C. Model FSBX120V Release Device: For non-motorized doors with voltage input 120VAC with battery backup.
- 1. Capable of operating on a voltage of 120VAC, and contain internal fuse and transient protection to guard against power surges; a red, enclosure-mounted LED shall indicate power to the device.
 - 2. Capable of holding and releasing up to a 40 lb. load imposed by a fusible link/sash chain assembly attached to a release mechanism within the door construction.
 - 3. Provide with an internal battery backup system capable of providing up to 24 hours of battery power to support alarm logic, smoke detector, release capability and audible and visible signaling appliances. Device shall monitor battery charge and annunciate the need for battery replacement via an integral sounder; a green, enclosure-mounted LED that indicates the presence of the battery backup system.

- a. Battery backup/power system shall contain a management system providing trickle charge capabilities.
 - b. During a power outage, and upon depletion of the battery, the device will initiate door closure by releasing the fusible link/sash chain assembly and initiating gravity closure of the door.
 - c. A DIP-switch selectable feature shall provide the capability of operating on battery power upon loss of line power or closing the door through the release of the fusible link assembly initiating gravity closure of the door
4. Includes DIP-switch selectable delay settings of 10, 20, or 60 seconds upon alarm activation to allow for passageway clearance before initiating door closure.

**** NOTE TO SPECIFIER ** Contact manufacturer for list of compatible smoke or heat detectors.**

5. Capable of receiving an alarm input from compatible 2-wire normally open smoke detectors, 4-wire normally open smoke detectors, or normally open heat detectors, or input from a fire alarm control panel via a relay module providing a Form C dry contact output to the release device.
- a. Capable of receiving input from a maximum of two smoke detectors.
 - b. Use with an End-of-Line (EOL) device to ensure the integrity of the wiring

**** NOTE TO SPECIFIER ** The following paragraph is optional for use with non-tension doors with motor operation that also uses the optional audible and visual signaling. Delete if not required.**

6. Provide with optional audible and visual signaling appliances to operate during the alarm closing cycle. Device shall be capable of activating and powering a maximum of two audible/visible notification devices, e.g. strobes, horns or horn/strobes. Device shall recognize that the door is in the closed position via input received from a proximity switch, located underneath the door and activated when the door is in the closed position and resting upon the switch, to prevent accidental release of the fusible link/sash chain (or 1/16th cable) assembly; an amber, enclosure-mounted LED shall indicate activation of the proximity switch.
7. Provide with relay and trouble outputs to provide notification to a fire alarm control panel when an alarm or trouble state exists.
8. Circuit board shall have diagnostic LEDs to assist with field installation by indicating alarm or trouble conditions present within the smoke detector loops, as well as activation of the proximity switch.
9. Includes an enclosure-mounted test switch that simulates an alarm condition when depressed and held for a length of time equal to the DIP-switch selectable delay setting, either 10, 20, or 60 seconds. A remote key test switch is also provided to simulate an alarm condition during testing procedures.

- D. Model FSCX24V Release Device: For motorized doors operating on a voltage of 24VDC with battery backup.

**** NOTE TO SPECIFIER ** Select one of the two following paragraphs as required for the project.. Note that the second paragraph is for environmental models and are not UL Listed but are Rated NEMA 4/4x.**

- 1. Release device shall be used in conjunction with an appropriate UL 325-rated commercial door operator, either a gearhead, jackshaft, or hoist operator equipped with auxiliary open and close limit switches, to create a door closing system.
- 2. Release device shall be used in conjunction with an NEMA 4/4X commercial door operator, either a gearhead, jackshaft, or hoist operator equipped with auxiliary open and close limit switches, to create a door closing system.

3. Capable of holding and releasing up to a 40 lb. load imposed by a fusible link/sash chain assembly attached to a release mechanism within the door construction.
4. Provide with an internal battery backup system capable of providing up to 24 hours of battery power to support alarm logic, smoke detector, release capability and audible and visible signaling appliances. Device shall monitor battery charge and annunciate the need for battery replacement via an integral sounder; a green, enclosure-mounted LED that indicates the presence of the battery backup system.
 - a. Battery backup/power system shall contain a management system providing trickle charge capabilities.
 - b. During a power outage, and upon depletion of the battery, the device will initiate door closure by releasing the fusible link/sash chain assembly and initiating gravity closure of the door.
 - c. A DIP-switch selectable feature shall provide the capability of operating on battery power upon loss of line power or closing the door through the release of the fusible link assembly initiating gravity closure of the door
5. Includes DIP-switch selectable delay settings of 10, 20, or 60 seconds upon alarm activation to allow for passageway clearance before initiating door closure.

**** NOTE TO SPECIFIER ** Contact manufacturer for list of compatible smoke or heat detectors.**

6. Capable of receiving an alarm input from compatible 2-wire normally open smoke detectors, 4-wire normally open smoke detectors, or normally open heat detectors, or input from a fire alarm control panel via a relay module providing a Form C dry contact output to the release device.
 - a. Capable of receiving input from a maximum of two smoke detectors.
 - b. Use with an End-of-Line (EOL) device to ensure the integrity of the wiring

**** NOTE TO SPECIFIER ** The following paragraph is optional for use with non-tension doors with motor operation that also uses the optional audible and visual signaling. Delete if not required.**

7. Provide with optional audible and visual signaling appliances to operate during the alarm closing cycle. Device shall be capable of activating and powering a maximum of two audible/visible notification devices, e.g. strobes, horns or horn/strobes. Device shall recognize that the door is in the closed position via input received from a proximity switch, located underneath the door and activated when the door is in the closed position and resting upon the switch, to prevent accidental release of the fusible link/sash chain (or 1/16th cable) assembly; an amber, enclosure-mounted LED shall indicate activation of the proximity switch.
8. Provide with relay and trouble outputs to provide notification to a fire alarm control panel when an alarm or trouble state exists.
9. Circuit board shall have diagnostic LEDs to assist with field installation by indicating alarm or trouble conditions present within the smoke detector loops, as well as activation of the auxiliary close limit switch.
10. Includes an enclosure-mounted test switch that simulates an alarm condition when depressed and held for a length of time equal to the DIP-switch selectable delay setting, either 10, 20, or 60 seconds. A remote key test switch is also provided to simulate an alarm condition during testing procedures.
11. Hold open/release device shall recognize that the door is in the closed position and where motor driven, be capable of sensing that power is available to the motor. The device may be wired to close on alarm.

12. Upon alarm, the device shall offer the DIP-switch selectable feature of motorized door closure through the operator or bypassing the operator and initiating gravity door closure by releasing the fusible link assembly and engaging the door's release mechanism.
13. Audible and visual signaling appliances shall be provided to annunciate closure due to alarm or power loss conditions.
14. Device shall provide three-time obstruction cycling of the door through the operator
 - a. An electric sensing edge (by others) attached to the bottom edge of the door, and connected to both the device and the operator.
 - b. Upon contact by the sensing edge with an obstruction, the closing door shall reverse and the device will instruct the operator to repeat the attempt at closure two additional cycles.
 - c. Failure to reach the closed position will activate the one of two selectable actions:
15. Release device shall reverse the direction of the door through the operator upon the sensing edge making contact with an obstruction and repeat the attempt to achieve closure for two additional cycles.
 - a. Mode of operation upon failure to close the door shall be one of two DIP-switch selectable options
 - 1) Failure to reach the closed position upon completion of the closure cycle or within a factory set time limit will result in the door being lowered by the operator upon the object. The door will rest on the obstruction until the obstruction is removed, at which point the door will resume closure through the operator to a fully closed position.
 - 2) Failure to reach the closed position upon completion of the closure cycle or within a factory selected time limit will result in gravity closure of the door. The door will rest on the obstruction until the obstruction is removed, at which point door closure shall be achieved through gravity drop.
 - b. Device shall provide a DIP-switch selectable 4-minute or 2-minute safety timer setting that will initiate gravity door closure if the operator close limit is not completed with the selected time or one of the modes of operation upon encountering an obstruction is not completed.
 - c. Loss of power to the operator or release device an alarm condition will result in gravity closure of the door.
16. Upon successful test completion of door closure through the operator with no obstructions encountered, the release device shall offer the DIP-switch selectable feature of allowing automatic open after the test input is cleared.
17. Release device shall offer a dry contact relay that may be used to activate signaling appliances or other external signaling functions.

E. Model FSCX120 Release Device: For motorized doors operating on a voltage of 120VAC with battery backup.

**** NOTE TO SPECIFIER ** Select one of the two following paragraphs as required for the project.. Note that the second paragraph is for environmental models and are not UL Listed but are Rated NEMA 4/4x.**

1. Release device shall be used in conjunction with an appropriate UL 325-rated commercial door operator, either a gearhead, jackshaft, or hoist operator equipped with auxiliary open and close limit switches, to create a door closing system.
2. Release device shall be used in conjunction with an NEMA 4/4X commercial door operator, either a gearhead, jackshaft, or hoist operator equipped with auxiliary open and close limit switches, to create a door closing system.

3. Capable of operating on a voltage of 120VAC, and shall contain internal fuse and transient protection to guard against power surges; a red, enclosure-mounted LED shall indicate power to the device.
4. Capable of holding and releasing up to a 40 lb. load imposed by a fusible link/sash chain assembly attached to a release mechanism within the door construction.
5. Provide with an internal battery backup system capable of providing up to 24 hours of battery power to support alarm logic, smoke detector, release capability and audible and visible signaling appliances. Device shall monitor battery charge and annunciate the need for battery replacement via an integral sounder; a green, enclosure-mounted LED that indicates the presence of the battery backup system.
 - a. Battery backup/power system shall contain a management system providing trickle charge capabilities.
 - b. During a power outage, and upon depletion of the battery, the device will initiate door closure by releasing the fusible link/sash chain assembly and initiating gravity closure of the door.
 - c. A DIP-switch selectable feature shall provide the capability of operating on battery power upon loss of line power or closing the door through the release of the fusible link assembly initiating gravity closure of the door.
 - d. Hold open/release device shall recognize that the door is in the closed position and where motor driven, be capable of sensing that power is available to the motor. The device will be wired to close on alarm.
6. Includes DIP-switch selectable delay settings of 10, 20, or 60 seconds upon alarm activation to allow for passageway clearance before initiating door closure.

**** NOTE TO SPECIFIER ** Contact manufacturer for list of compatible smoke or heat detectors.**

7. Capable of receiving an alarm input from compatible 2-wire normally open smoke detectors, 4-wire normally open smoke detectors, or normally open heat detectors, or input from a fire alarm control panel via a relay module providing a Form C dry contact output to the release device.
 - a. Capable of receiving input from a maximum of two smoke detectors.
 - b. Use with an End-of-Line (EOL) device to ensure the integrity of the wiring

**** NOTE TO SPECIFIER ** The following paragraph is optional for use with non-tension doors with motor operation that also uses the optional audible and visual signaling. Delete if not required.**

8. Provide with optional audible and visual signaling appliances to operate during the alarm closing cycle. Device shall be capable of activating and powering a maximum of two audible/visible notification devices, e.g. strobes, horns or horn/strobes. Device shall recognize that the door is in the closed position via input received from a proximity switch, located underneath the door and activated when the door is in the closed position and resting upon the switch, to prevent accidental release of the fusible link/sash chain (or 1/16th cable) assembly; an amber, enclosure-mounted LED shall indicate activation of the proximity switch.
9. Provide with relay and trouble outputs to provide notification to a fire alarm control panel when an alarm or trouble state exists.
10. Circuit board shall have diagnostic LEDs to assist with field installation by indicating alarm or trouble conditions present within the smoke detector loops, as well as activation of the auxiliary close limit switch.
11. Includes an enclosure-mounted test switch that simulates an alarm condition when depressed and held for a length of time equal to the DIP-switch selectable delay setting, either 10, 20, or 60 seconds. A remote key test

- switch is also provided to simulate an alarm condition during testing procedures.
12. Upon alarm, the device shall offer the DIP-switch selectable feature of motorized door closure through the operator or bypassing the operator and initiating gravity door closure by releasing the fusible link assembly and engaging the door's release mechanism.
 13. Audible and visual signaling appliances shall be provided to annunciate closure due to alarm or power loss conditions.
 14. Device shall provide three-time obstruction cycling of the door through the operator
 - a. An electric sensing edge (by others) attached to the bottom edge of the door, and connected to both the device and the operator.
 - b. Upon contact by the sensing edge with an obstruction, the closing door shall reverse and the device will instruct the operator to repeat the attempt at closure two additional cycles.
 - c. Failure to reach the closed position will activate the one of two selectable actions:
 15. Release device shall reverse the direction of the door through the operator upon the sensing edge making contact with an obstruction and repeat the attempt to achieve closure for two additional cycles.
 - a. Mode of operation upon failure to close the door shall be one of two DIP-switch selectable options
 - 1) Failure to reach the closed position upon completion of the closure cycle or within a factory set time limit will result in the door being lowered by the operator upon the object. The door will rest on the obstruction until the obstruction is removed, at which point the door will resume closure through the operator to a fully closed position.
 - 2) Failure to reach the closed position upon completion of the closure cycle or within a factory selected time limit will result in gravity closure of the door. The door will rest on the obstruction until the obstruction is removed, at which point door closure shall be achieved through gravity drop.
 - b. Device shall provide a DIP-switch selectable 4-minute or 2-minute safety timer setting that will initiate gravity door closure if the operator close limit is not completed with the selected time or one of the modes of operation upon encountering an obstruction is not completed.
 - c. Loss of power to the operator or release device an alarm condition will result in gravity closure of the door.
 16. Upon successful test completion of door closure through the operator with no obstructions encountered, the release device shall offer the DIP-switch selectable feature of allowing automatic open after the test input is cleared.
 17. Release device shall offer a dry contact relay that may be used to activate signaling appliances or other external signaling functions.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify opening sizes, tolerances and conditions are acceptable.
- B. Examine conditions of substrates, supports, and other conditions under which this work is to be performed.

- C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Install rolling counter fire doors in compliance with requirements of NFPA 80. Test fire-release system and reset components after testing.
- C. Use anchorage devices to securely fasten assembly to wall construction and building framing without distortion or stress.
- D. Securely and rigidly brace components suspended from structure. Secure guides to structural members only.
- E. Fit and align assembly including hardware; level and plumb, to provide smooth operation.

**** NOTE TO SPECIFIER ** Select the following paragraph for electric operation of counter doors and delete if not required.**

- F. Coordinate installation of electrical service with Section 16150. Complete wiring from disconnect to unit components.

**** NOTE TO SPECIFIER ** Select the following paragraph for Fire Sentinel Devices used with doors. Delete if not applicable.**

- G. Install and test Fire Sentinel release device(s) in accordance with the manufacturer's instructions and in compliance with applicable regulations and codes of the local authority having jurisdiction.
- H. Coordinate installation of sealants and backing materials at frame perimeter as specified in Section 07900.
- I. Install perimeter trim and closures.

3.4 ADJUSTING

- A. Test for proper operation and adjust as necessary to provide proper operation without binding or distortion.

**** NOTE TO SPECIFIER ** Select the following paragraph for Fire Sentinel Devices used with doors. Delete if not applicable.**

- B. Release device(s) shall be tested and witnessed for proper operation with the door manufacturer recommendations
- C. Adjust hardware and operating assemblies for smooth and noiseless operation.

3.5 FIELD QUALITY CONTROL

- A. Functional testing of fire door and window assemblies shall be performed by IDEA Certified personnel with knowledge and understanding of the operating components of the type of door being subject to testing.

3.6 CLEANING

- A. Clean curtain and components using non-abrasive materials and methods recommended by manufacturer.
- B. Remove labels and visible markings.
- C. Touch-up, repair or replace damaged products before Substantial Completion.

3.7 PROTECTION

- A. Protect installed products until completion of project.

END OF SECTION