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SECTION 08337

HIGH PERFORMANCE OVERHEAD HIGH SPEED DOORS

RAPIDFLEX MODELS 990-995

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PART 1 GENERAL

1.1 SECTION INCLUDES

A. High Performance Flexible Bottom Interior Overhead High Speed Fabric Doors.

B. High Performance Interior Overhead High Speed Fabric Doors.

C. High Performance Exterior Overhead High Speed Fabric Doors.

D. High Performance Exterior Overhead High Speed Rubber Doors.

1.2 RELATED SECTIONS

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

B. Section 06200 - Finish Carpentry: Wood jamb and head trim.

C. Section 08333 - Security Grilles.

D. Section 08710 - Door Hardware: Product Requirements for cylinder core and keys.

E. Section 09900 - Painting: Field applied finish.

F. Section 16130 - Raceway and Boxes: Conduit from electric circuit to door operator and from door operator to control station.

G. Section 16150 - Wiring Connections: Power to disconnect.

1.3 REFERENCES

A. ASTM A 36 - Standard Specification for Carbon Structural Steel.

B. ASTM A 500 - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.

C. ASTM E 283 - Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.

D. ASTM E 330 - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.

E. ASTM A 653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

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

G. UL Listed - Underwriters Laboratories Inc. Product Listed.

1.4 DESIGN / PERFORMANCE REQUIREMENTS

A. High Performance Flexible Bottom Interior Overhead High Speed Fabric Door RapidFlex 990:

1. Static Pressure Resistance: Design door assembly to withstand ultimate static pressure load of 3.0 psf (144 Pa) at 12 feet wide, in conformance to ASTM E 330.

2. Dynamic Pressure Resistance: Design door assembly to be able to operate under constant dynamic pressure load of 1.0 psf (48 Pa).

B. High Performance Interior Overhead High Speed Fabric Door RapidFlex 991:

1. Air Infiltration Rating: Design door assembly to resist air infiltration, from one side of the opening to the other side, of less than or equal to 0.236 cfm/sq ft, in conformance to ASTM E 283.

2. Static Pressure Resistance: Design door assembly to withstand ultimate static pressure load of 7.5 psf (359 Pa) at 10 feet wide, in conformance to ASTM E 330.

3. Dynamic Pressure Resistance: Design door assembly to be able to operate under constant dynamic pressure load of 2.5 psf (119 Pa).

C. High Performance Interior Overhead High Speed Fabric Door RapidFlex 992:

1. Static Pressure Resistance: Design door assembly to withstand ultimate static pressure load of 4.0 psf (192 Pa) at 16 feet wide, in conformance to ASTM E 330.

2. Dynamic Pressure Resistance: Design door assembly to be able to operate under constant dynamic pressure load of 2.5 psf (119 Pa).

D. High Performance Exterior Overhead High Speed Fabric Door RapidFlex 993:

1. Static Pressure Resistance: Design door assembly to withstand ultimate static pressure load of 4.0 psf (192 Pa) at 16 feet wide, in conformance to ASTM E 330.

2. Dynamic Pressure Resistance: Design door assembly to be able to operate under constant dynamic pressure load of 2.5 psf (119 Pa).

E. High Performance Heavy Duty Exterior Overhead High Speed Fabric Door RapidFlex 994

1. Static Pressure Resistance: Design door assembly to withstand ultimate static pressure load of 22 psf (1053.37 Pa) at 20 feet wide, in conformance to ASTM E 330.

2. Dynamic Pressure Resistance: Design door assembly to be able to operate under constant dynamic pressure load of 5 psf (239.4 Pa).

F. High Performance Extreme Exterior Overhead High Speed Rubber Door RapidFlex 995

1. Static Pressure Resistance: Design door assembly to withstand ultimate static pressure load of 27 psf (1292.77 Pa) at 19 feet wide, in conformance to ASTM E 330.

2. Dynamic Pressure Resistance: Design door assembly to be able to operate under constant dynamic pressure load of 5 psf (239.4 Pa).

G. Single-Source Responsibility: Provide doors, guides, motors, and accessories from one manufacturer for each type of door. Provide secondary components from source acceptable to manufacturer of primary components.

H. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories, Inc. acceptable to authority having jurisdiction as suitable for purpose specified.

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 door materials, construction and fabrication.
4. Operating characteristics, electrical characteristics, and furnished accessories. Include automatic closing devices and testing and resetting instructions
5. Installation instructions.

C. Shop Drawings: Include detailed plans, elevations, details of framing members, anchoring methods, required clearances, hardware, and accessories. Include relationship with adjacent construction.

D. Selection Samples: For each finish specified, two complete sets of color chips representing manufacturer's full range of available colors and finishes.

E. Verification Samples: For each finish specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and finishes.

F. Manufacturer's Certificates: Certify products meet or exceed specified requirements.

G. Closeout Submittals: Provide manufacturer’s maintenance instructions Including a detailed parts lists and maintenance recommendations.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in performing Work of this section with a minimum of 3 years experience in the fabrication and installation of security closures.

B. Installer Qualifications: Installer Qualifications: Company specializing in performing Work of this section with minimum 2 years and approved by manufacturer.

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. Warranty: Manufacturer’s limited door warranty and operator system, except the finish, to be free of defects in material and workmanship for 5 years.

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: arcat@overheaddoor.com.

B. Substitutions: Not permitted.

C. Requests for substitutions will be considered in accordance with provisions of Section 01600.

2.2 HIGH PERFORMANCE INTERIOR HIGH SPEED OVERHEAD FABRIC DOORS

A. Model: Overhead Door RapidFlex 990 interior high-speed industrial door:

1. Performance:

a. Opening Speed: Door to operate at a variable speed up to 70 inches (1778 mm) per second (control system dependent).

b. Closing Speed: Door to operate at a variable speed up to 40 inches (1016 mm) per second.

c. Operation Cycles: Drive motor and gearbox capable of operating for not less than 1,000,000 cycles. One operation cycle is complete

when a door is opened from the closed position to the fully open position and returned to the closed position.

B. Model: Overhead Door RapidFlex 991 interior high-speed industrial door:

1. Performance:

a. Opening Speed: Door to operate at a variable speed up to 70 inches (1778 mm) per second (control system dependent).

b. Closing Speed: Door to operate at a variable speed up to 40 inches (1016 mm) per second.

c. Operation Cycles: Drive motor and gearbox capable of operating for not less than 1,000,000 cycles. One operation cycle is complete when a door is opened from the closed position to the fully open position and returned to the closed position.

C. Model: Overhead Door RapidFlex 992 strutted interior high-speed industrial door:

1. Performance:

a. Opening Speed: Door to operate at a variable speed up to 65 inches (1651 mm) per second (control system dependent).

b. Closing Speed: Door to operate at a variable speed up to 40 inches (1016 mm) per second.

c. Operation Cycles: Drive motor and gearbox capable of operating for not less than 1,000,000 cycles. One operation cycle is complete when a door is opened from the closed position to the fully open position and returned to the closed position.

D. Materials and Components:

1. Door Curtain Design:

   a. Door Curtain: High strength curtain, as follows.

      1) Blue 2 layers of PVC coated polyester with 1 ply of polyester weave

      2) Red 2 layers of PVC coated polyester with 1 ply of polyester weave

      3) Black 2 layers of PVC coated polyester with 1 ply of polyester weave

      4) Gray 2 layers of PVC coated polyester with 1 ply of polyester weave

   b. Vision Section: Minimum 2 mm thick clear PVC, full width 20 inch (508 mm) height vision panel, reinforced with main fabric material across the full width.

   c. Curtain Retainers: Nylon 66 curtain lock at the outside edges of the curtain engaged inside the Guides under static and dynamic pressures.

   d. Curtain Wind Ribs: Panels connected by extruded aluminum wind ribs to retain panel sections under pressure and to allow for easy panel replacement. Wind Ribs are 1.5 inch (38.10 mm) 6063 T6 extruded aluminum, powder coated safety yellow for high visibility.

2. Bottom Bar: Fully padded, break away bottom bar full width of the opening, sufficient to maintain bottom edge of curtain parallel to the door threshold.

   a. Finish: Powder coated safety yellow.

   b. Upon impact, bottom bar releases from Guides and door operation is stopped. Controller must indicate problem encountered and instruct operator on steps to fix the problem. Detection must be achieved via a solid state device for accuracy, no external electromechanical switch is allowed.

1) Door must automatically reset itself after impact by pressing a button on control panel.

2) Provide door with wireless failsafe electric safety edge.

3) Break away detection sensitivity must be field adjustable.

3. Guides: Construct of high strength steel with members fully bolted together.

   a. Extend assembly a maximum of 5.88 inches (149.4 mm) from the wall.

   b. Extend assembly width a maximum of 8.0 inches (203.2 mm) outward to the side from clear daylight opening.

   c. Guides have a minimum wall thickness of 0.119 inches (3.02 mm) to minimize damage if impacted.

   d. Guides have a full height weather seal on entire perimeter of door panel.

   e. Finish: Powder coated safety yellow

   f. Door shall have no visible air gaps along the side or top of the door when door panel is in the closed or down position.

4. Door Header: Top roll assembly fabricated of high strength steel barrel supported with powder coated high strength steel brackets at each end with self-aligning bearings.

   a. Drum Barrel System: Minimum 6.625 inches (168.3 mm) diameter ASTM A 500 Grade B high strength steel pipe.

   b. Brackets: Minimum 1/4 inch (6 mm) thick ASTM A 36 hot rolled steel with heavy-duty, self-aligning bearings with cast iron housings.

   c. Springless System: No balancing springs or counterweights permitted.

d. Head frame provided with a single brush seal along the top of the door.

5. Hood: Top roll assembly enclosed with an external metal hood.

   a. Finish: Galvanized steel hood with black polyester top coat.

   b. Material: 22 gauge steel with intermediate supports as required.

6. Electric Door Operator: UL listed.

   a. Usage Classification: Heavy duty, rated up to 60 cycles per hour under constant load.

   b. Motor Exposure: Exterior and Interior use.

   c. Direct Side Mounted: Operator mounted directly to door drive shaft to the left or right side of the door. No chain and sprocket allowed.

   d. Electrical Characteristics:

      1) Phase and Voltage:

         (a) 1-Phase 120V AC

         (b) 1-Phase 230V AC

         (c) 3-Phase 230V AC

         (d) 3-Phase 460V AC

         (e) 3-Phase 575V AC

      2) Hertz: 50/60.

   e. Operator: Minimum 0.75 horsepower. Motor and gearbox designed for high cycle operation with built-in gearbox failure door stop safety device

   f. Hand Chain: Manual brake disengagement pull switch and hand chain which allows door to be manually opened and closed during a power outage and installation.

g. Limit System: Magnetic type providing absolute positioning with push to set and remote setting capabilities. Limit system shall remain synchronized with the door during manual operation and supply power interruptions.

h. Timer to Close: Each door to have automatic closing controlled by an adjustable hold open time delay.

7. Control System:

a. Microprocessor based with variable frequency drive controller, capable of variable speed control in both up and down directions. System incorporates a Liquid Crystal Display (LCD) to display the system status.

b. Capable of monitoring and reporting on a variety of operating conditions, including: Current operating status, Current command status, Current error status (if applicable), Hoist interlock status (if applicable), Service reminder status, and 24VDC status.

c. Control system is housed in a NEMA 4X panel with built-in push buttons and main power padlock-able rotary disconnect switch.

8. Activation Devices: Provide for condition of exposure and for long-term, maintenance-free operation under normal traffic load for type of occupancy indicated. Coordinate activation and safety devices with door operation and door operator mechanisms.

a. Pedestrian Type Activation Devices:

1) Single Push Button Switch: Push to open, timer to close.

2) Palm Push Button Switch: Large type push button - push to open, timer to close.

3) Three Push Button Switch: Button for open, button for close, button for stop.

4) Pull Cord: Pull to open - Timer to Close.

5) Pull Cord: Pull to Open – Pull to Close.

6) Motion Sensor: BEA Falcon, microwave scanner, field adjustable wide angle.

(a) Differentiates between pedestrian and vehicular traffic.

(b) Prevents false activation from cross traffic,

(c) Remote control for set-up.

b. Vehicular Type Activation Devices:

1) Motion Sensor: BEA Falcon, microwave scanner, field adjustable wide angle.

(a) Differentiates between pedestrian and vehicular traffic.

(b) Prevents false activation from cross traffic,

(c) Remote control for set-up.

2) Loop Detector: Detects ferrous metal objects via an inductive field for activation. Requires a channel to be cut into floor to install inductive loop wire.

3) Pull Cord: Pull to open - Timer to Close.

4) Pull Cord: Pull to Open – Pull to Close.

5) Radio Control Activation: Near proximity portable push button remote control programmable to individual doors or multiple doors in common.

(a) One Button Remote Control.

(b) Four Button Remote Control.

9. Safety Devices: Provide for condition of exposure and for long-term, maintenance-free operation under normal traffic load for type of occupancy indicated. Coordinate safety devices with door operation and door operator mechanisms.

a. Door provided with two sets of Through Beam Photo Eyes located in plane or as close as possible to travelling path of the door curtain.

b. Door provided with monitored failsafe electric safety edge. Controller must indicate if the safety edge is not operable.

1) Connections between safety edge and controller shall be fully wireless. No coil cords allowed.

2) Bottom bar wireless system battery must be able to be replaced at ground level.

10. Finish Requirements:

a. Galvanized Steel: Hood galvanized in accordance with ASTM A 653 and receive rust-inhibitive, roll coating process, including 0.2 mils thick baked-on prime paint, and 0.6 mils thick baked-on black polyester top coat.

b. PowderGuard powder coat: Guides, bottom bar, and brackets shall be powder coated with weather and corrosion resistant polyester powder coat.

2.3 HIGH PERFORMANCE EXTERIOR HIGH SPEED OVERHEAD FABRIC DOORS

A. Model: Overhead Door RapidFlex 993 strutted exterior high-speed fabric door:

1. Performance:

a. Opening Speed: Door to operate at a variable speed up to 65 inches (1651 mm) per second (control system dependent).

b. Closing Speed: Door to operate at a variable speed up to 40 inches (1016 mm) per second.

c. Operation Cycles: Drive motor and gearbox capable of operating for not less than 1,000,000 cycles. One operation cycle is complete when a door is opened from the closed position to the fully open position and returned to the closed position.

B. Model: Overhead Door RapidFlex 994 strutted exterior high-speed fabric door:

1. Performance:

a. Opening Speed: Door to operate at a variable speed up to 55 inches (1397 mm) per second (control system dependent).

b. Closing Speed: Door to operate at a variable speed up to 40 inches (1016 mm) per second.

c. Operation Cycles: Drive motor and gearbox capable of operating for not less than 1,000,000 cycles. One operation cycle is complete when a door is opened from the closed position to the fully open position and returned to the closed position.

C. Materials and Components:

1. Door Curtain Design:

a. Door Curtain: High strength curtain, as follows.

1) Blue 3 layers of PVC coated polyester with 2 ply of polyester weave

2) Red 3 layers of PVC coated polyester with 2 ply of polyester weave

3) Orange 3 layers of PVC coated polyester with 2 ply of polyester weave

4) Gray 3 layers of PVC coated polyester with 2 ply of polyester weave

b. Vision Section: Minimum 2 mm thick clear PVC, full width 20 inch (508 mm) height vision panel, reinforced with main fabric material across the full width.

c. Curtain Wind Ribs: Curtain panels connected by extruded aluminum wind ribs to retain panel sections under pressure and to allow for easy panel replacement. Wind Ribs are 1.5 inch (38.10 mm) 6063 T6 extruded aluminum, powder coated safety yellow for high visibility.

d. Curtain Articulating Wind Ribs: Curtain panels connected by extruded aluminum articulating wind ribs to retain panel sections under pressure and to allow for easy panel replacement. Wind Ribs are comprised of two 2 inch (50.8 mm) 6063 T6 extruded aluminum, totaling to 4 inch (101.6 mm) high. Wind ribs are powder coated safety yellow for high visibility. Wind ribs shall articulate to allow for smooth operation of the door.

2. Bottom Bar: Fully padded, break away bottom bar full width of the opening, sufficient to maintain bottom edge of curtain parallel to the door threshold.

   a. Finish: Powder coated safety yellow.

   b. Upon impact, bottom bar releases from Guides and door operation is stopped. Controller must indicate problem encountered and instruct operator on steps to fix the problem. Detection must be achieved via a solid state device for accuracy, no external electromechanical switch is allowed.

      1) Door must automatically reset itself after impact by pressing a button on control panel.

      2) Provide door with wireless failsafe electric safety edge.

      3) Break away detection sensitivity must be field adjustable.

3. Guides: Construct of high strength steel with members fully bolted together.

a. Extend assembly a maximum of 5.88 inches (149.4 mm) from the wall.

b. Extend assembly width a maximum of 8.0 inches (203.2 mm) outward to the side from clear daylight opening.

c. Guides have a minimum wall thickness of 0.119 inches (3.02 mm) to minimize damage if impacted.

d. Extend assembly a maximum of 8.25 inches (209.55 mm) from the wall.

e. Extend assembly width a maximum of 8.69inches (246.06 mm) outward to the side from clear daylight opening.

f. Guides have a minimum wall thickness of 0.188 inches (1.78 mm) to minimize damage if impacted.

g. Guides have a full height weather seal on entire perimeter of door panel.

h. Finish: Powder coated safety yellow

i. Door shall have no visible air gaps along the side or top of the door when door panel is in the closed or down position.

4. Door Header: Top roll assembly fabricated of high strength steel barrel supported with powder coated high strength steel brackets at each end with self-aligning bearings.

a. Drum Barrel System: Minimum 6.625 inches (168.3 mm) diameter ASTM A 500 Grade B high strength steel pipe.

b. Brackets: Minimum 1/4 inch (6 mm) thick ASTM A 36 hot rolled steel with heavy-duty, self-aligning bearings with cast iron housings.

c. Springless System: No balancing springs or counterweights permitted.

d. Head frame provided with a single brush seal along the top of the door.

5. Hood: Top roll assembly enclosed with an external metal hood.
   a. Finish: Galvanized steel hood with black polyester top coat.
   b. Material: 22 gauge steel with intermediate supports as required.
6. Electric Door Operator: UL listed.
   a. Usage Classification: Heavy duty, rated up to 60 cycles per hour under constant load.
   b. Motor Exposure: Exterior and Interior use.
   c. Direct Side Mounted: Operator mounted directly to door drive shaft to the left or right side of the door. No chain and sprocket allowed.
   d. Electrical Characteristics:
      1) Phase and Voltage:
         (a) 1-Phase 120V AC (Model 993 only)
         (b) 1-Phase 230V AC (Model 993 only)
         (c) 3-Phase 230V AC
         (d) 3-Phase 460V AC
         (e) 3-Phase 575V AC
      2) Hertz: 50/60.
   e. Operator: Minimum 0.75 horsepower. Motor and gearbox designed for high cycle operation with built-in gearbox failure door stop safety device
   f. Operator: Minimum 1.0 horsepower. Motor and gearbox designed for high cycle operation with built-in gearbox failure door stop safety device

g. Hand Chain: Manual brake disengagement pull switch and hand chain which allows door to be manually opened and closed during a power outage and installation.

h. Limit System: Magnetic type providing absolute positioning with push to set and remote setting capabilities. Limit system shall remain synchronized with the door during manual operation and supply power interruptions.

i. Timer to Close: Each door to have automatic closing controlled by an adjustable hold open time delay.

7. Control System:

a. Microprocessor based with variable frequency drive controller, capable of variable speed control in both up and down directions. System incorporates a Liquid Crystal Display (LCD) to display the system status.

b. Capable of monitoring and reporting on a variety of operating conditions, including: Current operating status, Current command status, Current error status (if applicable), Hoist interlock status (if applicable), Service reminder status, and 24VDC status.

c. Control system is housed in a NEMA 4X panel with built-in push buttons and main power padlock-able rotary disconnect switch.

8. Activation Devices: Provide for condition of exposure and for long-term, maintenance-free operation under normal traffic load for type of occupancy indicated. Coordinate activation and safety devices with door operation and door operator mechanisms.

a. Pedestrian Type Activation Devices:

1) Single Push Button Switch: Push to open, timer to close.

2) Palm Push Button Switch: Large type push button - push to open, timer to close.

3) Three Push Button Switch: Button for open, button for close, button for stop.

4) Pull Cord: Pull to open - Timer to Close.

5) Pull Cord: Pull to Open – Pull to Close.

6) Motion Sensor: BEA Falcon, microwave scanner, field adjustable wide angle.

(a) Differentiates between pedestrian and vehicular traffic.

(b) Prevents false activation from cross traffic,

(c) Remote control for set-up.

b. Vehicular Type Activation Devices:

1) Motion Sensor: BEA Falcon, microwave scanner, field adjustable wide angle.

(a) Differentiates between pedestrian and vehicular traffic.

(b) Prevents false activation from cross traffic,

(c) Remote control for set-up.

2) Loop Detector: Detects ferrous metal objects via an inductive field for activation. Requires a channel to be cut into floor to install inductive loop wire.

3) Pull Cord: Pull to open - Timer to Close.

4) Pull Cord: Pull to Open – Pull to Close.

5) Radio Control Activation: Near proximity portable push button remote control programmable to individual doors or multiple doors in common.

(a) One Button Remote Control.

(b) Four Button Remote Control.

9. Safety Devices: Provide for condition of exposure and for long-term, maintenance-free operation under normal traffic load for type of occupancy indicated. Coordinate safety devices with door operation and door operator mechanisms.

    a. Door provided with two sets of Through Beam Photo Eyes located in plane or as close as possible to travelling path of the door curtain.

    b. Door provided with monitored failsafe electric safety edge. Controller must indicate if the safety edge is not operable.

        1) Connections between safety edge and controller shall be fully wireless. No coil cords allowed.

        2) Bottom bar wireless system battery must be able to be replaced at ground level.

10. Finish Requirements:

    a. Galvanized Steel: Hood galvanized in accordance with ASTM A 653 and receive rust-inhibitive, roll coating process, including 0.2 mils thick baked-on prime paint, and 0.6 mils thick baked-on black polyester top coat.

    b. PowderGuard powder coat: Guides, bottom bar, and brackets shall be powder coated with weather and corrosion resistant polyester powder coat.

2.4 HIGH PERFORMANCE EXTERIOR HIGH SPEED OVERHEAD RUBBER DOORS

A. Model: Overhead Door RapidFlex 995 extreme exterior high speed rubber door:

1. Performance:

a. Opening Speed: Door to operate at a variable speed up to 50 inches (1270 mm) per second (control system dependent).

b. Closing Speed: Door to operate at a variable speed up to 40 inches (1016 mm) per second.

c. Operation Cycles: Drive motor and gearbox capable of operating for not less than 1,000,000 cycles. One operation cycle is complete when a door is opened from the closed position to the fully open position and returned to the closed position.

B. Materials and Components:

1. Door Curtain Design:

a. Door Curtain: High strength curtain, as follows.

1) Black 5 layers of Nitrile Butadiene Rubber (NBR) with 4 ply of polyester weave

b. Vision Section: Minimum 2 mm thick clear PVC, full width 10 inch height by 18 inches (254 mm by 457 mm) vision panel.

c. Curtain Retainers: Curtain retained by polyethylene continuous wind locks at both edges of the panel to remain engage inside the guides under static and dynamic pressures.

2. Bottom Bar: Fully padded, break away bottom bar full width of the opening, sufficient to maintain bottom edge of curtain parallel to the door threshold.

a. Finish: Powder coated safety yellow.

b. Upon impact, bottom bar releases from Guides and door operation is stopped. Controller must indicate problem encountered and instruct operator on steps to fix the problem. Detection must be achieved via a solid state device for accuracy, no external electromechanical switch is allowed.

1) Door must automatically reset itself after impact by pressing a button on control panel.

2) Provide door with wireless failsafe electric safety edge.

3) Break away detection sensitivity must be field adjustable

3. Guides: Construct of high strength steel with members fully bolted to.gether.

   a. Extend assembly a maximum of 8.5 inches (215.9 mm) from the wall.

   b. Extend assembly width a maximum of 6.56 inches (166.62 mm) outward to the side from clear daylight opening.

   c. Guides have a minimum wall thickness of 0.375 inches (9.53 mm) to minimize damage if impacted.

   d. Finish: Powder coated safety yellow

   e. Door shall have no visible air gaps along the side or top of the door when door panel is in the closed or down position.

4. Door Header: Top roll assembly fabricated of high strength steel barrel supported with powder coated high strength steel brackets at each end with self-aligning bearings.

   a. Drum Barrel System: Minimum 8.625 inches (219 mm) diameter ASTM A 500 Grade B high strength steel pipe.

   b. Idler: Fabric guiding barrel, minimum 4.875 inch (123.83 mm) diameter ASTM A 500 Grade B high strength steel pipe.

   c. Brackets: Minimum 1/4 inch (6 mm) thick ASTM A 36 hot rolled steel with heavy-duty, self-aligning bearings with cast iron housings.

   d. Springless System: No balancing springs or counterweights permitted.

e. Head frame provided with a single brush seal along the top of the door.

5. Hood: Top roll assembly enclosed with an external metal hood.

   a. Finish: Galvanized steel hood with black polyester top coat.

   b. Material: 22 gauge steel with intermediate supports as required.

6. Electric Door Operator: UL listed.

   a. Usage Classification: Heavy duty, rated up to 60 cycles per hour under constant load.

   b. Motor Exposure: Exterior and Interior use.

   c. Direct Side Mounted: Operator mounted directly to door drive shaft to the left or right side of the door. No chain and sprocket allowed.

   d. Electrical Characteristics:

      1) Phase and Voltage:

         (a) 3-Phase 230V AC

         (b) 3-Phase 460V AC

         (c) 3-Phase 575V AC

      2) Hertz: 50/60.

   e. Operator: Minimum 1.0 horsepower. Motor and gearbox designed for high cycle operation with built-in gearbox failure door stop safety device

   f. Hand Chain: Manual brake disengagement pull switch and hand chain which allows door to be manually opened and closed during a power outage and installation.

   g. Limit System: Magnetic type providing absolute positioning with push to set and remote setting capabilities. Limit system shall

remain synchronized with the door during manual operation and supply power interruptions.

h. Timer to Close: Each door to have automatic closing controlled by an adjustable hold open time delay.

7. Control System:

a. Microprocessor based with variable frequency drive controller, capable of variable speed control in both up and down directions. System incorporates a Liquid Crystal Display (LCD) to display the system status.

b. Capable of monitoring and reporting on a variety of operating conditions, including: Current operating status, Current command status, Current error status (if applicable), Hoist interlock status (if applicable), Service reminder status, and 24VDC status.

c. Control system is housed in a NEMA 4X panel with built-in push buttons and main power padlock-able rotary disconnect switch.

8. Activation Devices: Provide for condition of exposure and for long-term, maintenance-free operation under normal traffic load for type of occupancy indicated. Coordinate activation and safety devices with door operation and door operator mechanisms.

a. Pedestrian Type Activation Devices:

1) Single Push Button Switch: Push to open, timer to close.

2) Palm Push Button Switch: Large type push button - push to open, timer to close.

3) Three Push Button Switch: Button for open, button for close, button for stop.

4) Pull Cord: Pull to open - Timer to Close.

5) Pull Cord: Pull to Open – Pull to Close.

6) Motion Sensor: BEA Falcon, microwave scanner, field adjustable wide angle.

(a) Differentiates between pedestrian and vehicular traffic.

(b) Prevents false activation from cross traffic,

(c) Remote control for set-up.

b. Vehicular Type Activation Devices:

1) Motion Sensor: BEA Falcon, microwave scanner, field adjustable wide angle.

(a) Differentiates between pedestrian and vehicular traffic.

(b) Prevents false activation from cross traffic,

(c) Remote control for set-up.

2) Loop Detector: Detects ferrous metal objects via an inductive field for activation. Requires a channel to be cut into floor to install inductive loop wire.

3) Pull Cord: Pull to open - Timer to Close.

4) Pull Cord: Pull to Open – Pull to Close.

5) Radio Control Activation: Near proximity portable push button remote control programmable to individual doors or multiple doors in common.

(a) One Button Remote Control.

(b) Four Button Remote Control.

9. Safety Devices: Provide for condition of exposure and for long-term, maintenance-free operation under normal traffic load for type of occupancy indicated. Coordinate safety devices with door operation and door operator mechanisms.

a. Door provided with two sets of Through Beam Photo Eyes located in plane or as close as possible to travelling path of the door curtain.

b. Door provided with monitored failsafe electric safety edge. Controller must indicate if the safety edge is not operable.

1) Connections between safety edge and controller shall be fully wireless. No coil cords allowed.

2) Bottom bar wireless system battery must be able to be replaced at ground level.

10. Finish Requirements:

a. Galvanized Steel: Hood galvanized in accordance with ASTM A 653 and receive rust-inhibitive, roll coating process, including 0.2 mils thick baked-on prime paint, and 0.6 mils thick baked-on black polyester top coat.

b. PowderGuard powder coat: Guides, bottom bar, and brackets shall be powder coated with weather and corrosion resistant polyester powder coat.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify opening sizes, tolerances and conditions are acceptable.

B. Verify site electrical characteristics and supplies.

C. Examine conditions of substrates, supports, and other conditions under which this work is to be performed.

D. 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. Use anchorage devices to securely fasten assembly to wall construction and building framing without distortion or stress.

C. Securely and rigidly brace components suspended from structure. Secure guides to structural members only.

D. Fit and align assembly including hardware; level and plumb, to provide smooth operation.

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

F. Coordinate installation of sealants and backing materials at frame perimeter as specified in Section 07900.

G. Install perimeter trim and closures.

H. Instruct Owner's personnel in proper operating procedures and maintenance schedule.

3.4 STARTUP SERVICE

A. Engage a factory-authorized service representative to perform startup service.

1. Perform installation and startup checks according to manufacturer's written instructions.

2. Test and adjust controls and safety devices. Replace damaged and malfunctioning controls and equipment.

3.5 ADJUSTING

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

B. Adjust hardware and operating assemblies for smooth and noiseless operation.

C. Adjust seals to provide tight fit around entire perimeter.

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 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain high performance overhead coiling doors.

3.8 PROTECTION

A. Protect installed products until completion of project.

3.9 SCHEDULES

SECTION 08337

HIGH PERFORMANCE OVERHEAD HIGH SPEED DOORS

RAPIDFLEX MODELS 990-995

A. :

1.

2.

3.

B. :

1.

2.

3.

END OF SECTION