

The Genuine. The Original.



**SECTION 083323.13
RAPID COILING DOORS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Interior and exterior high-speed coiling fabric doors.
- B. Exterior high-speed coiling rubber doors.
- C. Interior high-speed coiling insulated fabric doors.
- D. High-speed metal doors.

1.02 RELATED REQUIREMENTS

- A. Section 260583 - Wiring Connections: Power to disconnect.

1.03 REFERENCE STANDARDS

- A. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2019.
- B. ASTM A500/A500M - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes; 2023.
- C. ASTM E330/E330M - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference; 2014 (Reapproved 2021).
- D. DASMA 403 - Specification for High Speed Doors and Grilles; 2024.
- E. FBC TAS 201 - Impact Test Procedures; Testing Application Standard; 1994.
- F. FBC TAS 202 - Criteria for Testing Impact and Non-Impact Resistant Building Envelope Components Using Uniform Static Air Pressure; Testing Application Standard; 1994.
- G. ITS (DIR) - Directory of Listed Products; Current Edition.
- H. UL (DIR) - Online Certifications Directory; Current Edition.

1.04 SUBMITTALS

- A. Product Data: Provide << **general construction; electrical equipment; component connections and details; and _____**>>.
- B. Shop Drawings: Indicate pertinent dimensioning, anchorage methods, hardware locations, and installation details.
- C. Manufacturer's Instructions: Indicate installation sequence and procedure details, and adjustment and alignment instructions.
- D. Manufacturer's qualification statement.
- E. Installer's qualification statement.
- F. Maintenance Data: Indicate << **lubrication requirements and frequency; periodic adjustments required; and _____**>>.

G. Specimen warranty.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with at least << **three**; or _____>> years of << **documented**; _____; or **None - N/A**>> experience.
- B. Installer Qualifications: Company specializing in performing work of type specified and with at least << **three**; or _____>> years << **documented**; _____; or **None - N/A**>> experience << **and approved by manufacturer; or None - N/A**>>.
- C. Products Requiring Electrical Connection: Listed and classified by << **ITS (DIR); UL (DIR); testing firm acceptable to authorities having jurisdiction; or _____**>> as suitable for purpose specified.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Protect materials from exposure to moisture.
- C. Store materials in dry, warm, ventilated, weathertight location.

1.07 WARRANTY

- A. Manufacturer Warranty: Provide 5-year manufacturer warranty. Complete forms in <<Owner>>'s name and register with manufacturer.

PART 2 PRODUCTS

2.01 MANUFACTURER

- A. Overhead Door Corporation; www.overheaddoor.com; 1 (800) 929-3667.
- B. Substitutions: Not permitted.

2.02 INTERIOR AND EXTERIOR HIGH-SPEED COILING FABRIC DOORS

- A. Overhead Door™ Brand; Model 990 interior high-speed roll-up industrial door.
 - 1. Curtain Fabric: Reinforced polyvinyl chloride (PVC) curtain.
 - 2. Width: << _____ **feet (_____ mm)**>>.
 - 3. Height: << _____ **feet (_____ mm)**>>.
 - 4. Mounting: Surface-mounted << **on side indicated on drawings; on interior side; on exterior side; or _____**>>.
 - 5. Performance Standards: <<**DASMA 403**>> requirements for high-performance doors.
 - 6. Opening Speed: Door to operate at variable speed up to << **70 inches (1778 mm)**>> per second.
 - 7. Closing Speed: Door to operate at variable speed up to << **40 inches (1016 mm)**>> per second.
 - 8. Operation Cycles: Drive motor and gearbox capable of operating for not less than one million cycles. One operation cycle complete when door opened from closed position to fully open position and returned to closed position.

9. Usage Classification: Heavy duty. No chain and sprocket allowed.
10. Durability: Doors to operate at minimum of one million cycles when selected, installed, operated, and maintained.
11. Wind Load: Design door assembly to withstand ultimate static wind load of << **3 psf (144 Pa)**>> in accordance with <<**ASTM E330/E330M**>>.
12. Curtain Fabric: << **22 oz/sq yd (746 g/sq m)**>> nominal.
 - a. Fabric Color: << **Blue; Gray; Red; White; or _____**>>.
13. Fabric Curtain Construction: Continuous design comprised of single length of fabric.

14. Vision Panels: << **20 inches (508 mm)**>> high, spaced evenly across door.
 - a. Material: Clear PVC.
15. Curtain Retainers: Nylon 66 curtain lock at outside edges of curtain engaged inside guides under wind load.
16. Bottom Bar: Flexible bottom edge assembly fully wrapped in yellow PVC fabric, with breakaway function full width of opening, sufficient to maintain bottom edge of curtain parallel to door threshold.
 - a. Upon impact, flexible bottom edge releases from guides and door operation stops.
 - 1) Controller indicates problem encountered and instructs operator on steps to fix problem.
 - 2) Press button on control panel to reset door after impact.
 - 3) Provide door with wireless failsafe electric safety edge.
 - 4) Include field-adjustable breakaway sensitivity.
17. Weatherstripping and Seals: Vinyl brush seal, resilient type, located at guide edges and where curtain enters hood enclosure. Bottom seal vinyl-wrapped, flexible bottom edge.
18. Side Guides, Channels: Constructed of high-strength steel with members fully bolted together. Guides have full-height weather seal on entire perimeter of door panel.
 - a. Finish: PowderGuard Premium powder coat in << **safety yellow; or _____**>>.
19. 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: <<**ASTM A500/A500M**>> Grade B, high-strength steel pipe; minimum << **6-5/8-inch (168.3 mm)**>> diameter.
 - b. Brackets: <<**ASTM A36/A36M**>> hot-rolled steel with heavy-duty, self-aligning bearings with cast iron housings; minimum << **1/4 inch (6 mm)**>> thick.
 - c. Springless System: No balancing springs or counterweights permitted.
 - d. Head frame provided with single brush seal along lintel.

- e. Finish: PowderGuard Premium powder coat in << **black**; or _____>>.
- 20. Hood: << **Top-roll assembly enclosed with external metal hood**; or **Not required**>>.
 - a. Finish: << **Black polyester topcoat**; or _____>>.
 - b. Material: Galvanized steel with intermediate supports.
 - c. Shape: Square.
- 21. Motor Cover: << **Not required**; or **Required**>>.
- 22. Steel Finish: << **PowderGuard Premium powder coat; PowderGuard Zinc base coat with PowderGuard Premium top coat; PowderGuard Anti-microbial powder coat**; or _____>>.
- 23. Obstruction Safety Detection:
 - a. Dual infrared sensors mounted in-plane to door curtain at << **18 inches (457 mm)**>> and << **50 to 54 inches (1270 to 1372 mm)**>> from floor.
 - b. Light curtain in-plane to travelling path of door curtain. Size: << **3 feet (914 mm); 6 feet (1829 mm)**; or _____ feet (_____ mm)>>.
- 24. Reversing Safety Edge: Door provided with monitored failsafe electric safety edge. Controller indicates inoperable safety edge.
 - a. Wireless connections between safety edge and controller required. No coil cords allowed.
 - b. Require ground level replacement of bottom bar wireless system battery.
- 25. Operation: Direct drive motor and gearbox system with field-changeable universal handing and gearbox safety device.
- 26. Control Panel: Variable frequency drive NEMA 4X cULus listed, onboard self-diagnostic and service reminder, built-in padlockable fused disconnect, and easy-to-read LCD text screen for troubleshooting.
 - a. Capable of monitoring and reporting on various operating conditions, including current operating status, current command status, current error status, hoist interlock status, service reminder status, and 24 VDC status.
- 27. Manual Override: Pull switch and hand chain allowing manual door operation during power outage and installation.
- 28. Limit System: Magnetic type providing absolute positioning with push-to-set and remote-setting capabilities. Limit system to synchronize with door during manual operation and supply power interruptions.
- 29. Timer to Close: Each door to have automatic closing controlled by adjustable hold-open time delay.
- 30. Operation Supply Voltage: << **120 VAC single-phase; 208 VAC single-phase with transformer; 220 VAC single-phase; 208 VAC three-phase with transformer; 230 VAC three-phase; 460 VAC three-phase; 575 VAC three-phase with transformer**; or _____>>.

31. Actuation Options: Provide << **push button**; **key switch**; **pull cord**; **loop detector**; **motion detector**; **treadle switch**; **radio control**; **wireless connection**; and _____ >>.
 32. Signaling Device Options: << **Red and green LED warning lights**; **Horn and strobe combination**; **Rotating warning light**; or _____ >>.
 33. Optional LED Lighting System: Programmable light bar << **3 feet (914 mm)**>> tall with red, yellow, green lighting.
- B. Overhead Door™ Brand; Model 991 interior high-speed roll-up industrial door.
1. Curtain Fabric: Reinforced polyvinyl chloride (PVC) curtain.

 2. Width: << _____ **feet (_____ mm)**>>.

 3. Height: << _____ **feet (_____ mm)**>>.
 4. Mounting: Surface-mounted << **on side indicated on drawings**; **on interior side**; **on exterior side**; or _____ >>.
 5. Performance Standards: <<**DASMA 403**>> requirements for high-performance doors.
 6. Opening Speed: Door to operate at variable speed up to << **70 inches (1778 mm)**>> per second.
 7. Closing Speed: Door to operate at variable speed up to << **40 inches (1016 mm)**>> per second.
 8. Operation Cycles: Drive motor and gearbox capable of operating for not less than one million cycles. One operation cycle is complete when door is opened from closed position to fully open position and returned to closed position.
 9. Usage Classification: Heavy duty. No chain and sprocket allowed.
 10. Durability: Doors to operate at minimum of one million cycles when selected, installed, operated, and maintained.
 11. Wind Load: Design door assembly to withstand ultimate static wind load of << **7.5 psf (359 Pa)**>> in accordance with <<**ASTM E330/E330M**>>.
 12. Air Tightness: << **0.236 cfm/sq ft (1.199 L/sec sq m)**>> in accordance with <<**ASTM E283/E283M**>>.

 13. Curtain Fabric: << **40 oz/sq yd (1326 g/sq m)**; **45 oz/sq yd (1526 g/sq m)**; or _____ **inch (_____ mm)**>> nominal.
 - a. Fabric Color: << **Black**; **Blue**; **Gray**; **Orange**; **Red**; **Yellow**; **White**; **FDA Royal Blue**; **FDA White**; or _____ >>.
 14. Fabric Curtain Construction: Continuous design comprised of single length of fabric.

15. Vision Panels: << **20 inches (508 mm)**>> high, spaced evenly across door.
 - a. Material: Clear PVC.
16. Curtain Retainers: Nylon 66 curtain lock at outside edges of curtain engaged inside guides under wind load.
17. Bottom Bar: Extruded aluminum, breakaway bottom bar full width of opening, sufficient to maintain bottom edge of curtain parallel to door threshold.
 - a. Finish: PowderGuard Premium powder coat in << **safety yellow;**
or _____>>.
 - b. Upon impact, bottom bar releases from guides and door operation stops.
 - 1) Controller indicates problem encountered and instructs operator on steps to fix problem.
 - 2) Detection required via solid-state device for accuracy; allow no external electromechanical switch.
 - 3) Press button on control panel to reset door after impact.
 - 4) Provide door with wireless failsafe electric safety edge.
 - 5) Include field-adjustable breakaway sensitivity.
18. Weatherstripping and Seals: Vinyl brush seal, resilient type, located at guide edges and where curtain enters hood enclosure. Vinyl-wrapped bottom seal, sensing edge attached to bottom bar.
19. Side Guides, Channels: Constructed of high-strength steel with members fully bolted together. Guides have full-height weather seal.
 - a. Finish: << **PowderGuard Premium powder coat in safety yellow;** **PowderGuard Premium powder coat in _____;** **Manufacturer's standard 304 stainless steel with No.4 finish;**
or _____>>.
20. 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: <<**ASTM A500/A500M**>> Grade B, high-strength steel pipe; minimum << **6-5/8-inch (168.3 mm)**>> diameter.
 - b. Brackets: <<**ASTM A36/A36M**>> hot-rolled steel with heavy-duty, self-aligning bearings with cast iron housings; minimum << **1/4 inch (6 mm)**>> thick.

- c. Springless System: No balancing springs or counterweights permitted.
 - d. Head frame provided with single brush seal along lintel.
21. Hood: << **Top-roll assembly enclosed with external metal hood**; or **Not required**>>.
- a. Finish: << **Black polyester topcoat**; **304 stainless steel with No.4 finish**; or _____>>.
 - b. Material: << **Galvanized steel**; **Stainless steel**; or _____>> with intermediate supports.
 - c. Shape: << **Square**; **Sloped**; or _____>>.
22. Motor Cover: << **Not required**; or **Required**>>.
23. Steel Finish: << **PowderGuard Premium powder coat**; **PowderGuard Zinc base coat with PowderGuard Premium top coat**; **PowderGuard Anti-microbial powder coat**; **304 stainless steel with No.4 finish**; or _____>>.
- a. Finish: PowderGuard Premium powder coat in << **black**; or _____>>.
24. Obstruction Safety Detection:
- a. Dual infrared sensors mounted in-plane to door curtain at << **18 inches (457 mm)**>> and << **50 to 54 inches (1270 to 1372 mm)**>> from floor.
 - b. Light curtain in-plane to travelling path of door curtain. Size: << **3 feet (914 mm)**; **6 feet (1829 mm)**; or _____ feet (_____ mm)>>.
25. Reversing Safety Edge: Door provided with monitored failsafe electric safety edge. Controller indicates inoperable safety edge.
- a. Wireless connections between safety edge and controller required. No coil cords allowed.
 - b. Require ground level replacement of bottom bar wireless system battery.
26. Operation: Direct drive motor and gearbox system with field-changeable universal handing and gearbox safety device.
27. Control Panel: Variable frequency drive NEMA 4X cULus listed, onboard self-diagnostic and service reminder, built-in padlockable fused disconnect, and easy-to-read LCD text screen for troubleshooting.
- a. Capable of monitoring and reporting on various operating conditions, including current operating status, current command status, current error status, hoist interlock status, service reminder status, and 24 VDC status.
28. Manual Override: Pull switch and hand chain allowing manual door operation during power outage and installation.
29. Limit System: Magnetic type providing absolute positioning with push-to-set and remote-setting capabilities. Limit system to synchronize with door during manual operation and supply power interruptions.
30. Timer to Close: Each door to have automatic closing controlled by adjustable hold-open time delay.

31. Operation Supply Voltage: << **120 VAC single-phase; 208 VAC single-phase with transformer; 220 VAC single-phase; 208 VAC three-phase with transformer; 230 VAC three-phase; 460 VAC three-phase; 575 VAC three-phase with transformer; or _____>>**.
 32. Actuation Device Options: Provide << **push button; key switch; pull cord; loop detector; motion detector; treadle switch; radio control; wireless connection; and _____>>**.
 33. Signaling Device Options: << **Red and green LED warning lights; Horn and strobe combination; Rotating warning light; or _____>>**.
 34. Optional LED Lighting System: Programmable light bar << **3 feet (914 mm)>>** tall with red, yellow, green lighting.

 35. Cooler Application Air Curtain Option: << **Not required; or Required. Type: _____>>**.
 - a. Metal Components: << **Steel; Stainless steel; or _____>>**.
- C. Overhead Door™ Brand; Model 992 strutted << **interior; or exterior>>** high-speed roll-up industrial door.
1. Curtain Fabric: Reinforced polyvinyl chloride (PVC) curtain.

 2. Width: << **_____ feet (_____ mm)>>**.

 3. Height: << **_____ feet (_____ mm)>>**.
 4. Mounting: Surface-mounted << **on side indicated on drawings; on interior side; on exterior side; or _____>>**.
 5. Performance Standards: <<**DASMA 403**>> requirements for high-performance doors.
 6. Opening Speed: Door to operate at variable speed up to << **65 inches (1651 mm)>>** per second.
 7. Closing Speed: Door to operate at variable speed up to << **40 inches (1016 mm)>>** per second.

 8. Operation Cycles: Drive motor and gearbox capable of operating for not less than one million cycles. One operation cycle is complete when door is opened from closed position to fully open position and returned to closed position.
 9. Usage Classification: Heavy duty. No chain and sprocket allowed.

10. Durability: Doors to operate at minimum of one million cycles when selected, installed, operated, and maintained.
11. Wind Load: Design door assembly to withstand ultimate static wind load of << **4 psf (192 Pa)**>> in accordance with <<**ASTM E330/E330M**>>.

12. Curtain Fabric: << **40 oz/sq yd (1356 g/sq m); 45 oz/sq yd (1526 g/sq m); 65 oz/sq yd (2204 g/sq m);** or _____ oz/sq yd (_____ g/sq m)>> nominal.
 - a. Fabric Color: << **Black; Blue; Gray; Orange; Red; White; Yellow; Exterior Blue; Exterior Gray; Exterior Orange; Exterior Red; FDA Royal Blue; FDA White; or _____**>>.
13. Fabric Curtain Construction: Panel design comprised of multiple fabric panels connected by extruded aluminum wind ribs to retain panel sections. Wind ribs << **1-1/2-inch (38 mm)**>> 6063-T6 extruded aluminum, PowderGuard Premium powder coat in yellow for high visibility.

14. Vision Panels: << **20 inches (508 mm)**>> high, spaced evenly across door.
 - a. Material: Clear PVC.
15. Curtain Retainers: Wind ribs designed to retain panel sections under pressure and to allow for easy panel replacement.
16. Bottom Bar: Extruded aluminum, breakaway bottom bar full width of opening, sufficient to maintain bottom edge of curtain parallel to door threshold.
 - a. Finish: PowderGuard Premium powder coat in << **safety yellow**; or _____>>.
 - b. Upon impact, bottom bar releases from guides and door operation stops.
 - 1) Controller indicates problem encountered and instructs operator on steps to fix problem.
 - 2) Detection required via solid-state device for accuracy; no external electromechanical switch is allowed.
 - 3) Press button on control panel to reset door after impact.
 - 4) Provide door with wireless failsafe electric safety edge.
 - 5) Include field-adjustable breakaway sensitivity.
17. Weatherstripping and Seals: Vinyl brush seal, resilient type, located at guide edges and where curtain enters hood enclosure. Bottom seal is vinyl wrapped; sensing edge attached to bottom bar.

18. Side Guides, Channels: Constructed of high-strength steel with members fully bolted together. Guides have full-height weather seal.
- a. Finish: PowderGuard Premium powder coat in << **safety yellow**; or _____>>.
19. 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: << **ASTM A500/A500M**>> Grade B, high-strength steel pipe; minimum << **6-5/8-inch (168.3 mm)**>> diameter.
 - b. Brackets: << **ASTM A36/A36M**>> hot-rolled steel with heavy-duty, self-aligning bearings with cast iron housings; minimum << **1/4 inch (6 mm)**>> thick.
 - c. Springless System: No balancing springs or counterweights permitted.
 - d. Head frame provided with single brush seal along lintel.
- e. Finish: PowderGuard Premium powder coat in << **black**; or _____>>.
20. Hood: << **Top-roll assembly enclosed with external metal hood**; or **Not required**>>.
- a. Finish: Galvanized steel hood with << **black polyester topcoat**; or _____>>.
 - b. Material: Galvanized steel with intermediate supports.
 - c. Shape: Square.
21. Motor Cover: << **Not required**; or **Required**>>.
22. Steel Finish: << **PowderGuard Premium powder coat**; **PowderGuard Zinc base coat with PowderGuard Premium top coat**; **PowderGuard Anti-microbial powder coat**; or _____>>.
23. Obstruction Safety Detection:
- a. Dual infrared sensors mounted in-plane to door curtain at << **18 inches (457 mm)**>> and << **50 to 54 inches (1270 to 1372 mm)**>> from floor.
 - b. Light curtain in-plane to travelling path of door curtain. Size: << **3 feet (914 mm)**; **6 feet (1829 mm)**; or _____ feet (_____ mm)>>.
24. Reversing Safety Edge: Door provided with monitored failsafe electric safety edge. Controller indicates inoperable safety edge.

- a. Wireless connections between safety edge and controller required. No coil cords allowed.
- b. Require ground level replacement of bottom bar wireless system battery.
- 25. Operation: Direct drive motor and gearbox system with field-changeable universal handing and gearbox safety device.
- 26. Control Panel: Variable frequency drive NEMA 4X cULus listed, onboard self-diagnostic and service reminder, built-in padlockable fused disconnect, and easy-to-read LCD text screen for troubleshooting.
 - a. Capable of monitoring and reporting on various operating conditions, including current operating status, current command status, current error status, hoist interlock status, service reminder status, and 24 VDC status.
- 27. Manual Override: Pull switch and hand chain allowing manual door operation during power outage and installation.
- 28. Limit System: Magnetic type providing absolute positioning with push-to-set and remote-setting capabilities. Limit system to synchronize with door during manual operation and supply power interruptions.
- 29. Timer to Close: Each door to have automatic closing controlled by adjustable hold-open time delay.

- 30. Operation Supply Voltage: << **120 VAC single-phase; 208 VAC single-phase with transformer; 220 VAC single-phase; 208 VAC three-phase with transformer; 230 VAC three-phase; 460 VAC three-phase; 575 VAC three-phase with transformer; or _____**>>.
- 31. Actuation Device Options: Provide << **push button; key switch; pull cord; loop detector; motion detector; treadle switch; radio control; wireless connection; and _____**>>.
- 32. Signaling Device Option: << **Red and green LED warning lights; Horn and strobe combination; Rotating warning light; or _____**>>.
- 33. Optional LED Lighting System: Programmable light bar << **3 feet (914 mm)**>> tall with red, yellow, green lighting.
- D. Overhead Door™ Brand; Model 993 strutted exterior high-speed roll-up fabric door.
 - 1. Curtain Fabric: Reinforced polyvinyl chloride (PVC) curtain.

 - 2. Width: << **_____ feet (_____ mm)**>>.

 - 3. Height: << **_____ feet (_____ mm)**>>.
 - 4. Mounting: Surface-mounted << **on side indicated on drawings; on interior side; on exterior side; or _____**>>.
 - 5. Performance Standards: <<**DASMA 403**>> requirements for high-performance doors.
 - 6. Opening Speed: Door to operate at variable speed up to << **65 inches (1651 mm)**>> per second.

7. Closing Speed: Door to operate at variable speed up to << **40 inches (1016 mm)**>> per second.
8. Operation Cycles: Drive motor and gearbox capable of operating for not less than one million cycles. One operation cycle is complete when door is opened from closed position to fully open position and returned to closed position.
9. Usage Classification: Heavy duty. No chain and sprocket allowed.
10. Durability: Doors to operate at minimum of one million cycles when selected, installed, operated, and maintained.
11. Wind Load: Design door assembly to withstand ultimate static wind load of << **19.5 psf (933.7 Pa)**>> in accordance with <<**ASTM E330/E330M**>>.
12. Curtain Fabric: Five-layer exterior door curtain fabric, << **65 oz/sq yd (2204 g/sq m)**>> nominal.
 - a. Fabric Color: << **Exterior orange; Exterior red; Exterior gray; or Exterior blue**>>.
13. Fabric Curtain Construction: Panel design comprised of multiple fabric panels connected by extruded aluminum wind ribs to retain panel sections under wind load and to allow for easy panel replacement. Wind ribs << **1-1/2-inch (38 mm)**>> 6063-T6 extruded aluminum, with PowderGuard Premium powder coat in yellow for high visibility. End of wind ribs include roller locks.

14. Vision Panels: << **20 inches (508 mm)**>> high, spaced evenly across door.
 - a. Material: Clear PVC.
15. Curtain Retainers: Struts and rollers.
16. Bottom Bar: Extruded aluminum, breakaway bottom bar full width of opening, sufficient to maintain bottom edge of curtain parallel to door threshold. Bottom bar locking on floor.
 - a. Finish: PowderGuard Premium powder coat in << **safety yellow;**
or _____>>.
 - b. Upon impact, bottom bar releases from guides and door operation stops.
 - 1) Controller indicates problem encountered and instructs operator on steps to fix problem.
 - 2) Detection required via solid-state device for accuracy; no external electromechanical switch is allowed.
 - 3) Press button on control panel to reset door after impact.
 - 4) Provide door with wireless failsafe electric safety edge.
 - 5) Include field-adjustable breakaway sensitivity.
17. Weatherstripping and Seals: Vinyl brush seal, resilient type, located at guide edges and where curtain enters hood enclosure. Bottom seal is vinyl wrapped, sensing edge attached to bottom bar.
18. Side Guides, Channels: Constructed of high-strength steel with members fully bolted together. Guides have full-height weather seal.

- a. Finish: PowderGuard Premium powder coat in << **safety yellow**; or _____>>.
19. 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: <<**ASTM A500/A500M**>> Grade B, high-strength steel pipe; minimum << **6-5/8-inch (168.3 mm)**>> diameter.
 - b. Brackets: <<**ASTM A36/A36M**>> hot-rolled steel with heavy-duty, self-aligning bearings with cast iron housings; minimum << **1/4 inch (6 mm)**>> thick.
 - c. Springless System: No balancing springs or counterweights permitted.
 - d. Head frame provided with single brush seal along lintel.
- e. Finish: PowderGuard Premium powder coat in << **black**; or _____>>.
20. Hood: << **Top-roll assembly enclosed with external metal hood**; or **Not required**>>.
- a. Finish: Galvanized steel hood with << **black polyester topcoat**; or _____>>.
 - b. Material: Galvanized steel with intermediate supports.
- c. Shape: << **Square**; **Sloped**; or _____>>.
21. Motor Cover: << **Not required**; or **Required**>>.
22. Steel Finish: << **PowderGuard Premium powder coat**; **PowderGuard Zinc base coat with PowderGuard Premium top coat**; **PowderGuard Anti-microbial powder coat**; or _____>>.
23. Obstruction Safety Detection:
- a. Dual infrared sensors mounted in-plane to door curtain at << **18 inches (457 mm)**>> and << **50 to 54 inches (1270 to 1372 mm)**>> from floor.
 - b. Light curtain in-plane to travelling path of door curtain. Size: << **3 feet (914 mm)**; **6 feet (1829 mm)**; or _____ feet (_____ mm)>>.
24. Reversing Safety Edge: Door provided with monitored failsafe electric safety edge. Controller indicates inoperable safety edge.
- a. Wireless connections between safety edge and controller required. No coil cords allowed.

- b. Require ground level replacement of bottom bar wireless system battery.
 - 25. Operation: Direct drive motor and gearbox system with field-changeable universal handing and gearbox safety device.
 - 26. Control Panel: Variable frequency drive NEMA 4X cULus listed, onboard self-diagnostic and service reminder, built-in padlockable fused disconnect, and easy-to-read LCD text screen for troubleshooting.
 - a. Capable of monitoring and reporting on various operating conditions, including current operating status, current command status, current error status, hoist interlock status, service reminder status, and 24 VDC status.
 - 27. Manual Override: Pull switch and hand chain allowing manual door operation during power outage and installation.
 - 28. Limit System: Magnetic type providing absolute positioning with push-to-set and remote-setting capabilities. Limit system to synchronize with door during manual operation and supply power interruptions.
 - 29. Timer to Close: Each door to have automatic closing controlled by adjustable hold-open time delay.

 - 30. Operation Supply Voltage: << **120 VAC single-phase; 208 VAC single-phase with transformer; 220 VAC single-phase; 208 VAC three-phase with transformer; 230 VAC three-phase; 460 VAC three-phase; 575 VAC three-phase with transformer; or _____>>**.
 - 31. Actuation Device Options: Provide << **push button; key switch; pull cord; loop detector; motion detector; treadle switch; radio control; wireless connection; and _____>>**.
 - 32. Signaling Device Option: << **Red and green LED warning lights; Horn and strobe combination; or Rotating warning light>>**.
 - 33. Optional LED Lighting System: Programmable light bar << **3 feet (914 mm)>>** tall with red, yellow, green lighting.
- E. Overhead Door™ Brand; Model 994 strutted exterior high-speed roll-up fabric door.
- 1. Curtain Fabric: Reinforced polyvinyl chloride (PVC) curtain.

 - 2. Width: << **_____ feet (_____ mm)>>**.

 - 3. Height: << **_____ feet (_____ mm)>>**.
 - 4. Mounting: Surface-mounted << **on side indicated on drawings; on interior side; on exterior side; or _____>>**.
 - 5. Performance Standards: <<**DASMA 403**>> requirements for high-performance doors.
 - 6. Opening Speed: Door to operate at variable speed up to << **55 inches (1397 mm)>>** per second.
 - 7. Closing Speed: Door to operate at variable speed up to << **40 inches (1016 mm)>>** per second.

8. Operation Cycles: Drive motor and gearbox capable of operating for not less than one million cycles. One operation cycle is complete when door is opened from closed position to fully open position and returned to closed position.
9. Usage Classification: Heavy duty. No chain and sprocket allowed.
10. Durability: Doors to operate at minimum of one million cycles when selected, installed, operated, and maintained.
11. Wind Load: Design door assembly to withstand ultimate static pressure load of << **22 psf (1053 Pa)**>> in accordance with <<**ASTM E330/E330M**>>.
12. Curtain Fabric: Five-layer exterior door curtain fabric, << **65 oz/sq yd (2204 g/sq m)**>> nominal.
 - a. Fabric Color: << **Exterior blue; Exterior gray; Exterior orange; Exterior red; or _____**>>.
13. Fabric Curtain Construction: Sectional design comprised of multiple fabric panels with interlocking aluminum hinges acting as integral wind bars.

14. Vision Panels: << **20 inches (508 mm)**>> high, spaced evenly across door.
 - a. Material: Clear PVC.
15. Curtain Retainers: Nylon 66 curtain lock at outside edges of curtain engaged inside guides under wind load.
16. Wind Strut: Curtain panels connected by extruded aluminum wind ribs to retain panel sections under wind load and to allow for easy panel replacement. Wind ribs << **1-1/2-inch (38 mm)**>> 6063 T6 extruded aluminum, powder-coated yellow for high visibility. End of wind ribs include roller locks.
17. Curtain Articulating Wind Ribs: Curtain panels connected by extruded aluminum articulating wind ribs to retain panel sections under wind load and to allow for easy panel replacement. Wind ribs two << **2-inch (51 mm)**>> 6063 T6 extruded aluminum, totaling to << **4 inches (102 mm)**>> high; powder-coated yellow for high visibility; articulating to allow for smooth operation of door.
18. Bottom Bar: Fully padded, breakaway bottom bar full width of opening, sufficient to maintain bottom edge of curtain parallel to door threshold.
 - a. Finish: Powder-coated << **yellow; or _____**>>.
 - b. Upon impact, bottom bar releases from guides and door operation stops.
 - 1) Controller indicates problem encountered and instructs operator on steps to fix problem.
 - 2) Detection required via solid-state device for accuracy; no external electromechanical switch is allowed.
 - 3) Press button on control panel to reset door after impact.
 - 4) Provide door with wireless failsafe electric safety edge.
 - 5) Include field-adjustable breakaway sensitivity.
19. Weatherstripping and Seals: Vinyl brush seal, resilient type, located at guide edges and where curtain enters hood enclosure. Bottom seal is vinyl wrapped, sensing edge attached to bottom bar.
20. Side Guides, Channels: Constructed of high-strength steel with members fully bolted together. Guides have full-height weather seal.

- a. Finish: PowderGuard Premium powder coat in << **safety yellow;** or _____>>.
21. 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: <<**ASTM A500/A500M**>> Grade B, high-strength steel pipe; minimum << **6-5/8-inch (168.3 mm)**>> thick.
 - b. Brackets: <<**ASTM A36/A36M**>> hot-rolled steel with heavy-duty, self-aligning bearings with cast iron housings; minimum << **1/4 inch (6 mm)**>> thick.
 - c. Springless System: No balancing springs or counterweights permitted.
 - d. Head frame provided with single brush seal along lintel.
- e. Finish: PowderGuard Premium powder coat in << **black; or _____**>>.
22. Hood: << **Top-roll assembly enclosed with external metal hood; or Not required**>>.
- a. Finish: << **Black polyester topcoat; or _____**>>.
 - b. Material: Galvanized steel with intermediate supports.
- c. Shape: << **Square; Sloped; or _____**>>.
23. Motor Cover: << **Not required; or Required**>>.
24. Steel Finish: << **PowderGuard Premium powder coat; PowderGuard Zinc base coat with PowderGuard Premium top coat; PowderGuard Anti-microbial powder coat; or _____**>>.
25. Obstruction Safety Detection:
- a. Dual infrared sensors mounted in-plane to door curtain at << **18 inches (457 mm)**>> and << **50 to 54 inches (1270 to 1372 mm)**>> from floor.
 - b. Light curtain in-plane to travelling path of door curtain. Size: << **3 feet (914 mm); 6 feet (1829 mm); or _____ feet (_____ mm)**>>.
26. Reversing Safety Edge: Door provided with monitored failsafe electric safety edge. Controller indicates inoperable safety edge.
- a. Wireless connections between safety edge and controller required. No coil cords allowed.
 - b. Require ground level replacement of bottom bar wireless system battery.
27. Operation: Direct drive motor and gearbox system with field-changeable universal handing and gearbox safety device.

28. Control Panel: Variable frequency drive NEMA 4X cULus listed, onboard self-diagnostic and service reminder, built-in padlockable fused disconnect, and easy-to-read LCD text screen for troubleshooting.
 - a. Capable of monitoring and reporting on various operating conditions, including current operating status, current command status, current error status, hoist interlock status, service reminder status, and 24 VDC status.
29. Manual Override: Pull switch and hand chain allowing manual door operation during power outage and installation.
30. Limit System: Magnetic type providing absolute positioning with push-to-set and remote-setting capabilities. Limit system to synchronize with door during manual operation and supply power interruptions.
31. Timer to Close: Each door to have automatic closing controlled by adjustable hold-open time delay.

32. Operation Supply Voltage: << **208 VAC three-phase with transformer; 230 VAC three-phase; 460 VAC three-phase; 575 VAC three-phase with transformer; or _____**>>.
33. Actuation Device Options: Provide << **push button; key switch; pull cord; loop detector; motion detector; treadle switch; radio control; wireless connection; and _____**>>.
34. Signaling Device Option: << **Red and green LED warning lights; Horn and strobe combination; Rotating warning light; or _____**>>.
35. Optional LED Lighting System: Programmable light bar << **3 feet (914 mm)**>> tall with red, yellow, green lighting.

2.03 EXTERIOR HIGH-SPEED COILING RUBBER DOORS

- A. Overhead Door™ Brand; << **Model 995; Model 995LH**>>; extreme exterior, low-headroom, high-speed roll-up rubber door.
 1. Curtain Fabric: Multireinforced nitrile butadiene rubber (NBR).

 2. Width: << **_____ feet (_____ mm)**>>.

 3. Height: << **_____ feet (_____ mm)**>>.
 4. Mounting: Surface-mounted << **on side indicated on drawings; on interior side; on exterior side; or _____**>>.
 5. Performance Standards: <<**DASMA 403**>> requirements for high-performance doors.
 6. Opening Speed: Door to operate at variable speed up to << **30 inches (762 mm)**>> per second.
 7. Closing Speed: Door to operate at variable speed up to << **20 inches (508 mm)**>> per second.

8. Headroom: << **12 inches (305 mm)**; **13 inches (330 mm)**; **15 inches (381 mm)**; or _____ inches (_____ mm)>>.
9. Operation Cycles: Drive motor and gearbox capable of operating for not less than one million cycles. One operation cycle is complete when door is opened from closed position to fully open position and returned to closed position.
10. Durability: Doors to operate at minimum of one million cycles when selected, installed, operated, and maintained.

11. Wind Load: Design door assembly to withstand ultimate static wind load of << **27 psf (1293 Pa)**>> in accordance with <<**ASTM E330/E330M**>>.
12. Curtain Fabric: Five-layer NBR rubber with four layers of polyester weave.
 - a. Fabric Color: << **Black; Blue; or _____**>>.
13. Vision Panels: << **20 inches (508 mm)**>> high, spaced evenly across door.
 - a. Material: Clear PVC.
14. Curtain Retainers: Nylon 66 curtain lock at outside edges of curtain engaged inside guides under wind load.
15. Bottom Bar: Double-angle bottom bar full width of opening, sufficient to maintain bottom edge of curtain parallel to door threshold.
 - a. Finish: PowderGuard Premium powder coat in << **safety yellow;** or _____>>.
 - b. Upon impact, bottom bar releases from guides and door operation stops.
 - 1) Controller indicates problem encountered and instructs operator on steps to fix problem.
 - 2) Detection required via solid-state device for accuracy; no external electromechanical switch is allowed.
 - 3) Press button on control panel to reset door after impact.
 - 4) Provide door with wireless failsafe electric safety edge.
 - 5) Include field-adjustable breakaway sensitivity.
16. Weatherstripping and Seals: Vinyl brush seal, resilient type, located at guide edges and where curtain enters hood enclosure. Bottom seal is vinyl wrapped, padded bottom bar.
17. Side Guides, Channels: Constructed of high-strength steel with members fully bolted together. Guides have full-height weather seal.

- a. Finish: PowderGuard Premium powder coat in << **safety yellow;** or _____>>.
18. 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: << **ASTM A500/A500M**>> Grade B, high-strength steel pipe; minimum << **6-5/8-inch (168.3 mm)**>> thick.
 - b. Brackets: << **ASTM A36/A36M**>> hot-rolled steel with heavy-duty, self-aligning bearings with cast iron housings; minimum << **1/4 inch (6 mm)**>> thick.
 - c. Springless System: No balancing springs or counterweights permitted.
 - d. Head frame provided with single brush seal along lintel.
- e. Finish: PowderGuard Premium powder coat in << **black;** or _____>>.
19. Hood: << **Top-roll assembly enclosed with external metal hood; or Not required**>>.
- a. Finish: << **Black polyester topcoat;** or _____>>.
 - b. Material: Galvanized steel with intermediate supports.
- c. Shape: << **Square; Sloped;** or _____>>.
20. Motor Cover: << **Not required;** or **Required**>>.
21. Steel Finish: << **PowderGuard Premium powder coat; PowderGuard Zinc base coat with PowderGuard Premium top coat; PowderGuard Anti-microbial powder coat;** or _____>>.
22. Obstruction Safety Detection:
- a. Dual infrared sensors mounted in-plane to door curtain at << **18 inches (457 mm)**>> and << **50 to 54 inches (1270 to 1372 mm)**>> from floor.
 - b. Light curtain in-plane to travelling path of door curtain. Size: << **3 feet (914 mm); 6 feet (1829 mm);** or _____ feet (_____ mm)>>.
23. Reversing Safety Edge: Door provided with monitored failsafe electric safety edge. Controller indicates inoperable safety edge.
- a. Wireless connections between safety edge and controller required. No coil cords allowed.
 - b. Require ground level replacement of bottom bar wireless system battery.
24. Operation: Direct drive motor and gearbox system with field-changeable universal handing and gearbox safety device.
25. Control Panel: Variable frequency drive NEMA 4X cULus listed, onboard self-diagnostic and service reminder, built-in padlockable fused disconnect, and easy-to-read LCD text screen for troubleshooting.

- a. Capable of monitoring and reporting on various operating conditions, including current operating status, current command status, current error status, hoist interlock status, service reminder status, and 24 VDC status.
- 26. Manual Override: Pull switch and hand chain allowing manual door operation during power outage and installation.
- 27. Limit System: Magnetic type providing absolute positioning with push-to-set and remote-setting capabilities. Limit system to synchronize with door during manual operation and supply power interruptions.
- 28. Timer to Close: Each door to have automatic closing controlled by adjustable hold-open time delay.
- 29. Operation Supply Voltage: << **208 VAC three-phase with transformer; 230 VAC three-phase; 460 VAC three-phase; 575 VAC three-phase with transformer; or _____>>**.
- 30. Actuation Device Options: Provide << **push button; key switch; pull cord; loop detector; motion detector; treadle switch; radio control; wireless connection; and _____>>**.
- 31. Signaling Device Option: << **Red and green LED warning lights; Horn and strobe combination; Rotating warning light; or _____>>**.
- 32. Optional LED Lighting System: Programmable light bar << **3 feet (914 mm)>>** tall with red, yellow, green lighting.

2.04 INTERIOR HIGH-SPEED COILING INSULATED FABRIC DOORS

- A. Overhead Door™ Brand; Model 997 interior high-speed roll-up industrial freezer/cooler door.
 - 1. Curtain Fabric: Reinforced, insulated, polyvinyl chloride (PVC) curtain.
 - 2. Width: << **_____ feet (_____ mm)>>**.
 - 3. Height: << **_____ feet (_____ mm)>>**.
 - 4. Mounting: Surface-mounted << **on side indicated on drawings; on interior side; on exterior side; or _____>>**.
 - 5. Performance Standards: <<**DASMA 403**>> requirements for high-performance doors.
 - 6. Opening Speed: Door to operate at variable speed up to << **80 inches (2032 mm)>>** per second.
 - 7. Closing Speed: Door to operate at variable speed up to << **40 inches (1016 mm)>>** per second.
 - 8. Operation Cycles: Drive motor and gearbox capable of operating for not less than one million cycles. One operation cycle is complete when door is opened from closed position to fully open position and returned to closed position.
 - 9. Durability: Doors to operate at minimum of one million cycles when selected, installed, operated, and maintained.

10. Wind Load: Design door assembly to withstand ultimate static wind load of << **2 psf (96 Pa)**>> in accordance with <<**ASTM E330/E330M**>>.
11. Curtain Fabric: Two layers of PVC-coated polyester with one-ply polyester weave on both interior and exterior side, surrounding overlapping, staggered, insulated sections welded together.
 - a. Fabric Color: << **Blue; Gray; Red; White; or _____**>>.
12. Curtain Retainers: Nylon 66 curtain lock at outside edges of curtain engaged inside guides under wind load.
13. Bottom Bar: Fiber-reinforced composite and two-layer, PVC-coated polyester with one-ply polyester weave wrapped breakaway bottom bar to provide full thermal barrier and strength to break away from either direction, and resettable from either side of opening after impact.
 - a. Finish: Powder-coated << **yellow; or _____**>>.
 - b. Upon impact, bottom bar releases from guides and door operation stops.
 - 1) Controller indicates problem encountered and instructs operator on steps to fix problem.
 - 2) Detection required via solid-state device for accuracy; no external electromechanical switch is allowed.
 - 3) Press button on control panel to reset door after impact.
 - 4) Provide door with wireless failsafe electric safety edge.
 - 5) Include field-adjustable breakaway sensitivity.
14. Weatherstripping and Seals: Vinyl brush seal, resilient type, located at guide edges and where curtain enters hood enclosure. Bottom seal is vinyl wrapped, padded bottom bar. Guides have full-height weather seal. No visible air gaps along side or top of door when door panel is in closed or down position.
15. Side Guides, Channels: Constructed of high-strength steel with members fully bolted together, combined with composite section interfacing with door to ensure door assembly has full interior-to-exterior thermal barrier.
 - a. Actively heated guides ensure complete height of guide has uniform temperature to ensure smooth door movement.
 - b. Finish: PowderGuard Premium powder coat in << **safety yellow; or _____**>>.
16. 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: <<**ASTM A500/A500M**>> Grade B, high-strength steel pipe; minimum << **6-5/8-inch (168.3 mm)**>> thick.
 - b. Brackets: <<**ASTM A36/A36M**>> hot-rolled steel with heavy-duty, self-aligning bearings with cast iron housings; minimum << **1/4 inch (6 mm)**>> thick.
 - c. Springless System: No balancing springs or counterweights permitted.
 - d. Head frame provided with single brush seal along lintel.
 - e. Finish: PowderGuard Premium powder coat in << **black; or _____**>>.

17. Hood: << **Top-roll assembly enclosed with external metal hood; or Not required**>>.
 - a. Finish: << **Black polyester topcoat; or _____**>>.
 - b. Material: Galvanized steel with continuous horizontal support.
 - c. Shape: Square.
18. Motor Cover: << **Not required; or Required**>>.
19. Steel Finish: << **PowderGuard Premium powder coat; PowderGuard Zinc base coat with PowderGuard Premium top coat; PowderGuard Anti-microbial powder coat; or _____**>>.
20. Obstruction Safety Detection: Dual infrared sensors mounted in-plane to door curtain at << **18 inches (457 mm)**>> and << **50 to 54 inches (1270 to 1372 mm)**>> from floor.
21. Reversing Safety Edge: Door provided with monitored failsafe electric safety edge. Controller indicates inoperable safety edge.
 - a. Wireless connections between safety edge and controller required. No coil cords allowed.
 - b. Require ground level replacement of bottom bar wireless system battery.
22. Operation: Direct drive motor and gearbox system with field-changeable universal handing and gearbox safety device.
23. Control Panel: Variable frequency drive NEMA 4X cULus listed, onboard self-diagnostic and service reminder, built-in padlockable fused disconnect, and easy-to-read LCD text screen for troubleshooting.
 - a. Capable of monitoring and reporting on various operating conditions, including current operating status, current command status, current error status, hoist interlock status, service reminder status, and 24 VDC status.
24. Manual Override: Pull switch and hand chain allowing manual door operation during power outage and installation.
25. Limit System: Magnetic type providing absolute positioning with push-to-set and remote-setting capabilities. Limit system to synchronize with door during manual operation and supply power interruptions.
26. Timer to Close: Each door to have automatic closing controlled by adjustable hold-open time delay.
27. Operation Supply Voltage: << **230 VAC three-phase; 460 VAC three-phase; 575 VAC three-phase with transformer; or _____**>>.
28. Actuation Device Options: Provide << **push button; key switch; pull cord; loop detector; motion detector; treadle switch; radio control; wireless connection; and _____**>>.
29. Signaling Device Option: << **Red and green LED warning lights; Horn and strobe combination; Rotating warning light; or _____**>>.

30. Optional LED Lighting System: Programmable light bar << **3 feet (914 mm)**>> tall with red, yellow, green lighting.

31. Air Curtain: << **Not required**; or **Required. Type: _____**>>.

2.05 HIGH-SPEED METAL DOORS

- A. Overhead Door™ Brand; Model 998 high-speed metal roll-up industrial door.
1. Aluminum Panels: Double-wall construction with metal hinge system and integral weather seal between slats, designed to allow removal of individual slats.
 - a. Insulation in Panels: << **Not required**; or **Insulated option**>>.
 2. Width: << **feet (** **mm)**>>.
 3. Height: << **feet (** **mm)**>>.
 4. Mounting: Surface-mounted << **on side indicated on drawings**; **on interior side**; **on exterior side**; or _____>>.
 5. Performance Standards: <<**DASMA 403**>> requirements for high-performance doors.
 6. Opening Speed: Door to operate at variable speed up to << **80 inches (2032 mm)**>> per second.
 7. Closing Speed: Door to operate at variable speed up to << **20 inches (508 mm)**>> per second.
 8. Operation Cycles: Drive motor and gearbox capable of operating for not less than one million cycles. One operation cycle is complete when door is opened from closed position to fully open position and returned to closed position.
 9. Usage Classification: Heavy duty. No chain and sprocket allowed.
 10. Durability: Doors to operate at minimum of one million cycles when selected, installed, operated, and maintained.
 11. Wind Load: Design door assembly to withstand ultimate static wind load of << **100 psf (4788 Pa)**>> in accordance with <<**ASTM E330/E330M**>> on door << **15 feet (4572 mm)**>> wide.
 12. Impact Rating: Available with certification for large missile impact resistance (<<**FBC TAS 201**>> and <<**FBC TAS 202**>>), with design pressure of << **75 psf (3591 Pa)**>> at << **16 feet (4877 mm)**>> wide.
 13. Curtain Material: Double-walled 6063-T6 aluminum, << **5.8 inches (147 mm)**>> wide by << **1.2 inches (30.5 mm)**>> thick, with 6063-T6 aluminum for hinge

system. Doors using hinges not made of metal not acceptable. Provide UV-resistant weather seal between aluminum panel sections.

a. Finish: PowderGuard Premium powder coat.

b. Color: << **Silver**; or _____ >>.

14. Vision Panels: << **Not required; Polycarbonate sheet with proprietary abrasion- and UV-resistant surfaces; Perforated aluminum slats; or _____** >>.

a. Number of Vision Panels: << **Three; Not required; or _____** >>.

15. Bottom Bar: 6063-T6 aluminum with integrated wireless sensing edge.

a. Finish: PowderGuard Premium powder coat.

b. Color: << **Silver**; or _____ >>.

16. Weatherstripping and Seals: Vinyl seal located at guide edges and vinyl brush seal where curtain enters hood enclosure. Bottom seal is rubber astragal.

17. Side Guides, Channels: Constructed of high-strength steel with members fully bolted together. Guides have full-height weather seal.

a. Finish: PowderGuard Premium powder coat.

b. Color: << **Silver**; or _____ >>.

18. 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: <<**ASTM A500/A500M**>> Grade B, high-strength steel pipe; minimum << **6-5/8 inches (168.3 mm)**>> diameter.

b. Brackets: <<**ASTM A36/A36M**>> hot-rolled steel with heavy-duty, self-aligning bearings with cast iron housings; minimum << **1/4 inch (6 mm)**>> thick.

c. Head frame provided with single brush seal along lintel.

d. Finish: PowderGuard Premium powder coat in << **black**; or _____ >>.

19. Fascia: << **Not required**; **Galvanized steel: 22 gauge, 0.03 inch (0.076 mm); Galvanized steel: _____ gauge, _____ inch (_____ mm); or _____>>.**
 - a. Finish: << **Black polyester topcoat; Powder coated to match door; or _____>>.**
20. Motor Cover: << **Not required**; or **Required**>>.
21. Steel Finish: << **PowderGuard Premium powder coat; PowderGuard Zinc base coat with PowderGuard Premium top coat; PowderGuard Anti-microbial powder coat; or _____>>.**
22. Obstruction Safety Detection:
 - a. Dual infrared sensors mounted in-plane to door curtain at << **18 inches (457 mm)>> and << 50 to 54 inches (1270 to 1372 mm)>> from floor.**
 - b. Light curtain in-plane to travelling path of door curtain. Size: << **3 feet (914 mm); 6 feet (1829 mm); or _____ feet (_____ mm)>>.**
23. Reversing Safety Edge: Door provided with monitored failsafe electric safety edge. Controller indicates inoperable safety edge.
 - a. Wireless connections between safety edge and controller required. No coil cords allowed.
 - b. Require ground level replacement of bottom bar wireless system battery.
 - c. Belt tension sensor provided with monitored communication. Door operating with belt system requires tension monitoring.
24. Operation: Direct drive motor and gearbox system with field-changeable universal handing and gearbox safety device.
25. Control Panel: Variable frequency drive NEMA 4X cULus listed, onboard self-diagnostic and service reminder, built-in padlockable fused disconnect, and easy-to-read LCD text screen for troubleshooting.
 - a. Capable of monitoring and reporting on various operating conditions, including current operating status, current command status, current error status, hoist interlock status, service reminder status, and 24 VDC status.
26. Manual Override: Pull switch and hand chain allowing manual door operation during power outage and installation.
27. Limit System: Magnetic type providing absolute positioning with push-to-set and remote-setting capabilities. Limit system to synchronize with door during manual operation and supply power interruptions.
28. Timer to Close: Each door to have automatic closing controlled by adjustable hold-open time delay.

29. Operation Supply Voltage: << **230 VAC three-phase; 460 VAC three-phase; 575 VAC three-phase; or _____>>.**
30. Actuation Device Options: Provide << **push button; key switch; pull cord; loop detector; motion detector; treadle switch; radio control; wireless connection; and _____>>.**
31. Signaling Device Option: << **Red and green LED warning lights; Horn and strobe combination; Rotating warning light; or _____>>.**

32. Optional LED Lighting System: Programmable light bar << **3 feet (914 mm)**>> tall with red, yellow, green lighting.
- B. Overhead Door™ Brand; Model 999 high-speed metal roll-up industrial door.
1. Curtain Panels: Polycarbonate sheet with proprietary abrasion- and UV-resistant surfaces.
 2. Width: << **feet (** **mm)**>>.
 3. Height: << **feet (** **mm)**>>.
 4. Mounting: Surface-mounted << **on side indicated on drawings; on interior side; or** >>.
 5. Performance Standards: <<**DASMA 403**>> requirements for high-performance doors.
 6. Opening Speed: Door to operate at variable speed up to << **80 inches (2032 mm)**>> per second.
 7. Closing Speed: Door to operate at variable speed up to << **20 inches (508 mm)**>> per second.
 8. Operation Cycles: Drive motor and gearbox capable of operating for not less than one million cycles. One operation cycle is complete when door is opened from closed position to fully open position and returned to closed position.
 9. Usage Classification: Heavy duty. No chain and sprocket allowed.
 10. Durability: Doors to operate at minimum of one million cycles when selected, installed, operated, and maintained.
 11. Metal Curtain Components: 6063-T6 aluminum. Doors using hinges not made of metal not acceptable. Provide UV-resistant weather seal between aluminum panel sections.
 - a. Finish: PowderGuard Premium powder coat.
 - b. Color: << **Silver; or** >>.
 12. Bottom Bar: 6063-T6 aluminum with integrated wireless sensing edge.
 - a. Finish: PowderGuard Premium powder coat.
 - b. Color: << **Silver; or** >>.
 13. Weatherstripping and Seals: Vinyl seal located at guide edges and vinyl brush seal where curtain enters hood enclosure. Bottom seal is rubber astragal.

14. Side Guides, Channels: Constructed of high-strength steel with members fully bolted together. Guides have full-height weather seal.
 - a. Finish: PowderGuard Premium powder coat.
 - b. Color: << **Silver**; or _____ >>.
15. 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 diameter, << **ASTM A500/A500M** >> Grade B, high-strength steel pipe; minimum << **6-5/8-inch (168.3 mm)** >> diameter.
 - b. Brackets: << **ASTM A36/A36M** >> hot-rolled steel with heavy-duty, self-aligning bearings with cast iron housings; minimum << **1/4 inch (6 mm)** >> thick.
 - c. Head frame provided with single brush seal along lintel.
 - d. Finish: PowderGuard Premium powder coat in << **black**; or _____ >>.
16. Fascia: << **Not required**; **Galvanized steel: 22 gauge, 0.03 inch (0.076 mm); Galvanized steel: _____ gauge, _____ inch (_____ mm); or _____ >>.**
 - a. Finish: << **Black polyester topcoat; Powder-coated to match door; or _____ >>.**
17. Motor Cover: << **Not required**; or **Required** >>.
18. Steel Finish: << **PowderGuard Premium powder coat; PowderGuard Zinc base coat with PowderGuard Premium top coat; PowderGuard Anti-microbial powder coat; or _____ >>.**
19. Obstruction Safety Detection:
 - a. Dual infrared sensors mounted in-plane to door curtain at << **18 inches (457 mm)** >> and << **50 to 54 inches (1270 to 1372 mm)** >> from floor.
 - b. Light curtain in-plane to travelling path of door curtain. Size: << **3 feet (914 mm); 6 feet (1829 mm); or _____ feet (_____ mm)** >>.
20. Reversing Safety Edge: Door provided with monitored failsafe electric safety edge. Controller indicates inoperable safety edge.
 - a. Wireless connections between safety edge and controller required. No coil cords allowed.
 - b. Require ground level replacement of bottom bar wireless system battery.
21. Operation: Direct drive motor and gearbox system with field-changeable universal handing and gearbox safety device.
22. Control Panel: Variable frequency drive NEMA 4X cULus listed, onboard self-diagnostic and service reminder, built-in padlockable fused disconnect, and easy-to-read LCD text screen for troubleshooting.

- a. Capable of monitoring and reporting on various operating conditions, including current operating status, current command status, current error status, hoist interlock status, service reminder status, and 24 VDC status.
- 23. Manual Override: Pull switch and hand chain allowing manual door operation during power outage and installation.
- 24. Limit System: Magnetic type providing absolute positioning with push to set and remote setting capabilities. Limit system to synchronize with door during manual operation and supply power interruptions.
- 25. Timer to Close: Each door to have automatic closing controlled by adjustable hold-open time delay.
- 26. Operation Supply Voltage: << **230 VAC three-phase; 460 VAC three-phase; 575 VAC three-phase; or _____**>>.
- 27. Actuation Device Options: Provide << **push button; key switch; pull cord; loop detector; motion detector; treadle switch; radio control; wireless connection; and _____**>>.
- 28. Signaling Device Option: << **Red and green LED warning lights; Horn and strobe combination; Rotating warning light; or _____**>>.
- 29. Optional LED Lighting System: Programmable light bar << **3 feet (914 mm)**>> tall with red, yellow, green lighting.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify << **existing conditions; and _____**>> meet manufacturer's requirements before starting work.
- B. Verify opening sizes, tolerances and conditions are acceptable.

3.02 INSTALLATION

- A. Install in accordance with manufacturer's written instructions.
- B. Use anchorage devices to securely fasten assembly to wall construction and building structure without distortion or stress.
- C. Securely and rigidly brace components suspended from structure.<< **Secure guides to structural members only.; _____.; or None - N/A**>>
- D. Fit and align assembly including hardware; level and plumb, to provide smooth operation.
- E. Coordinate installation of electrical service; see Section 260583.
- F. Install enclosure and perimeter trim.

3.03 TOLERANCES

- A. Maintain dimensional tolerances and alignment with adjacent work.
- B. Maximum Variation from Plumb: << **1/16 inch (1.6 mm); or ___ inch (___ mm)**>>.
- C. Maximum Variation from Level: << **1/16 inch (1.6 mm); or ___ inch (___ mm)**>>.
- D. Longitudinal or Diagonal Warp: Plus or minus << **1/8 inch per 10 feet (3.2 mm per 3 m); or ___ inch per 10 feet (___ mm per 3 m)**>>.

3.04 ADJUSTING

- A. Adjust operating assemblies for smooth and noiseless operation.

3.05 CLEANING

- A. See Section 017000 - Execution and Closeout Requirements for additional requirements.
- B. Clean installed components.
- C. Remove labels and visible markings.

3.06 PROTECTION

- A. Protect finishes until completion of project.
- B. Touch up damaged finishes after Substantial Completion.

END OF SECTION