SECTION 08 33 23.13 – HIGH PERFORMANCE OVERHEAD COILING DOORS

1. GENERAL
	* + 1. RELATED DOCUMENTS
				1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
			2. SUMMARY
				1. Section Includes:

High performance overhead coiling rubber doors.

* + - * 1. Related Requirements:

Section 05 50 00 "Metal Fabrications" for miscellaneous steel supports.

Division 26 and 28 Sections for electrical connections including conduit and wiring for coiling door operators and access control devices.

* + - 1. REFERENCES
				1. References: Refer to the version year adopted by the Authority Having Jurisdiction.

National Electrical Manufacture’s Association (NEMA)

Underwriters Laboratories (UL)

* + - * 1. National Electrical Manufacture’s Association (NEMA)

Type 4 - Enclosures constructed for either indoor or outdoor use to provide a degree of protection to personnel against access to hazardous parts.

* + - * 1. Underwriters Laboratories (UL).

UL 508 Standard for Industrial Control Panels.

* + - * 1. Door & Access Systems Manufacturers Association (DASMA)
			1. DEFINITIONS
				1. Activation Device: Device that, when actuated, sends an electrical signal to the door operator to open the door.
				2. Safety Device: A device that detects the presence of an object or person within a zone where injury could occur and provides a signal to stop the movement of the door.
				3. High Performance Door: A powered door characterized by sliding action that is designed to sustain heavy usage at relatively high speeds.
				4. High Speed Door: (subcategory of *high performance doors*) A non-swinging door used primarily to facilitate vehicular access or material transportation, with a minimum opening rate of 32 inches per second and a minimum closing rate of 24 inches per second.
			2. SUBMITTALS
				1. Comply with Division 01 - Submittal Procedures.
				2. Product Data: For each type of high performance overhead coiling door and accessory.

Include construction details, material descriptions, dimensions of individual sub-assemblies (side frames, header, control panel, motor), profiles for slats, and finishes.

Include operating characteristics, electrical characteristics, and furnished accessories.

Include description of automatic closing device and testing and resetting instructions.

* + - * 1. Shop Drawings: For each installation and for special components not dimensioned or detailed in manufacturer's product data.

Include plans, elevations, sections, and mounting details.

Show locations of controls, locking devices, and other accessories.

Include diagrams for power, signal, and control wiring.

* + - * 1. Samples for Initial Selection: Manufacturer's finish charts showing full range of colors and textures available for units with factory-applied finishes.
				2. Samples for Verification: For each type of exposed finish on the following components, in manufacturer's standard sizes:

Curtain fabric.

* + - * 1. Informational Submittals: Manufacturer's product information and applicable sustainability program credits that are available to contribute towards a LEED rated project certification.

Credit MR 4.1and 4.2: Manufacturer's or fabricator's certificate indicating percentage of post-consumer recycled content by weight and pre-consumer recycled content by weight for each Product specified under this Section.

* + - * 1. Operating and Maintenance Manuals: Provide manufacturers operating and maintenance manuals Including a detailed parts list for high performance overhead coiling doors in quantity as required in Division 01, Closeout Submittals.
			1. QUALITY ASSURANCE
				1. Manufacturers Qualifications: Engage qualified manufacturers with a minimum 10 years of documented experience in manufacturing of doors and equipment of similar to that indicated for this Project and that have a proven record of successful in-service performance.
				2. Installer Qualifications: Installers, trained by the primary product manufacturer, with a minimum 3 years documented experience installing and maintenance of units similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
				3. Source Limitations: Obtain each type of door, frame, operator and sensor components specified in this Section from a single source, same manufacturer unless otherwise indicated.
			2. PROJECT CONDITIONS
				1. Field Measurements: Verify actual dimensions of openings by field measurements before fabrication and indicate on shop drawings.
				2. Electrical: Verify actual job site power (voltage, phase and Hertz).
				3. Verify environmental condition extremes.
				4. Verify door sequence of operations.
			3. COORDINATION
				1. Coordinate sizes and locations of door openings and framing as required for high performance overhead coiling doors.
				2. Electrical System Roughing-in: Coordinate layout and installation of high performance overhead coiling doors with connections to building power and access control system as applicable.

Fused disconnect required for each individual door within five feet of respective door (not supplied by door manufacturer).

* + - 1. WARRANTY
				1. General Warranty: Reference Division 01, General Requirements. Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.
				2. High Performance Overhead Coiling Doors shall be free of defects in material and workmanship for a period of one (1) year from the date of substantial completion.
				3. Special Product Warranty: Manufacturer's warranty in which manufacturer agrees to repair or replace components which fail to perform as follows:

5-year / 1,000,000 Cycle Limited Warranty on Drive Motor and Gearbox.

2-year / 300,000 Cycle Limited Warranty on all other Mechanical and Electrical Components.

***NOTE: Select door fabric warranty as required – coordinate with specified product***

Door Fabric:

**[Styrene-butadiene rubber (SBR) door panels (curtains) will be free of defects in materials and workmanship for the LIFETIME of the door.]**

**[**Ethylene propylene diene monomer (**EPDM) door panels are warranted for a period of five (5) years.]**

* + - * 1. During the warranty period a factory-trained technician shall perform service and affect repairs. A safety inspection shall be performed after each adjustment or repair and a completed inspection form shall be submitted to the Owner.
1. PRODUCTS
	* + 1. MANUFACTURER
				1. Manufacturer: ASSA ABLOY Entrance Systems, 350 Dividend Road, Peach Tree City, GA 30269. Toll Free 1-800-927-6342. Web- [www.assaabloyentrance.us](http://www.assaabloyentrance.us) Contact- sales.us.albany@assaabloy.com or Robert Moulton 419-340-3002.

***NOTE: Revise the following substitution clause as required by project requirements. Select either Item “B” or “C”***

* + - * 1. **[Substitutions: Requests for substitution and product approval in compliance with the specifications must be submitted in writing and in accordance with the procedures outlined in Division 1, Section, “Substitution Procedures”. Approval of requests is at the discretion of the architect, owner, and their designated consultants.]**
				2. **[Substitutions: Not Permitted.]**
			1. HIGH PERFORMANCE OVERHEAD COILING DOORS
				1. Model: VR2000M(Tough) high-speed industrial door. (Basis of Design):

Overhead coiling door with rubber fabric curtain.

Overhead counterbalance system, motor and gearbox drive system.

Door side frames.

Control panel, activation devices, and safety sensor devices.

* + - 1. PERFORMANCE REQUIREMENTS
				1. Opening Speed:

Springless System: Door to operate at a speed up to 36 inches (914.4 mm) per second (size dependent).

Counterbalanced System: Door to operate at a speed up to 60 inches (1524 mm) per second (size dependent).

* + - * 1. 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.
				2. Wind Resistance:

Windlock and Guide System: Up to 20 lbf/sq. ft. (957.6 N/sq. mm.) equivalent to 88 mph (141.6 km/hr).

 Wind Gussets: Up to 30 lbf/sq. ft. (1436.4 N/sq. mm.) equivalent to 110 mph (177 km/hr).

* + - 1. DOOR ASSEMBLY
				1. Door Curtain Design:

***NOTE: Select one of the following door curtain fabrics for the Albany UltraTough – Coordinate with door fabric warranty***

**[Door Fabric: ¼” thick 2 layers of Styrene Butadiene Rubber (SBR) each 1/8” (0.8mm) thick, 60 durometer; sandwiched with 1-ply, 110lbs (50kg) polyester cord center.]**

Complete with bonded SBR beveled continuous windlock on each side of panel, providing normal resiliency and flexibility at temperatures ranging from –40 °F to +180 °F (–40 C to +85 C).

Breaking strength 1100 lbs/in/ply.

[Door fabric: 2 layers of Ethylene Propylene Diene Monomer (EPDM) **each 1/8” (0.8mm) thick, 60 durometer; sandwiched with 1-ply, 110lbs (50kg) polyester cord center.**]

***NOTE: Select the following if vision panels are required for the Albany UltraTough***

**[Vision Panels: Polyvinyl chloride (PVC).]**

Glazed Panels: Replaceable 10 inch (254 mm) x 18 inch (457.2 mm) windows.

Bottom Bar: Bottom bar shall extend the full width of the curtain, sufficient to maintain the bottom edge of the curtain parallel to the door threshold at all times.

The bottom bar shall be constructed of a steel angle and flat bar bolted together and shall have a breakaway center section to reduce risk of damage during accidental impacts and provide ease of straightening, allowing for simple re-assembly.

6” tall weatherproof rubber loop made of EPDM able to seal uneven finished floors.

Door to be provided with wireless failsafe electric safety edge (see Safety Devices).

* + - * 1. Curtain Jamb Guides: Frame assemblies constructed of steel members to form a slot of sufficient depth to allow the thicker edges of the rubber curtain windlock to move freely in the guides at all times. Steel members are to be of sufficient thickness and rigidity to maintain the windlock within the guides while enabling the windlock to break away during impact.

The windlock feature runs the full height of the door curtain and is contained in the side frames to secure the door under wind pressure and to decrease air infiltration.

**[Steel] guides** and frame shall be chemical and corrosion resistant painted finish.

Side frames covers shall be hinged to allow easy curtain access.

* + - * 1. Door Header:

Top Roll System: Minimum 8 5/8 inches (219 mm) diameter, steel tube from 0.188 inches (4.75 mm) thick steel complying with ASTM A513.

Drum tube deflection shall not exceed 0.03 inches (0.762 mm) per foot (2.5 mm/m) of opening width.

Drive barrel shafts are constructed of minimum 2 inch (50.8 mm) diameter 1045 bolt-on steel shafts.

Idler: Fabric guiding barrel, constructed of minimum 4 inch (102 mm) O.D. round tubing with a minimum wall thickness of 0.134 inches (3.4 mm) and supported by minimum 1-1/2 inches (32 mm) diameter 1018 steel shafts.

Top Plates: Minimum 1/4 inch (6 mm) hot-rolled steel with heavy-duty, self-aligning bearings with cast iron housings to support both the spring and idler barrels. 2 inch (50.8 mm) diameter shaft bearing shall be load-rated at 10800 lbf (48000 N) dynamic and 6400 lbf (28500 N) static. 1-1/2 inch (32 mm) diameter idler shaft bearing shall be load-rated at 8150 lbf (36000 N) dynamic and 4400 lbf (19600 N) static.

**[Springless System: Direct Drive. Counter-balance or torsion springs allowed.] [Counterbalance system: Torsion springs shall be connected by chain and sprocket to drive barrel with 100,000 cycle rated torsion springs.]**

* + - * 1. Electric Door Operator: Reversible-type motor with controller for motor exposure indicated.

Usage Classification: Heavy duty, 30 or more cycles per hour and over 500 cycles per day.

Motor Exposure: Exterior and Interior use.

Side Mounted: Operator is mounted to the header assembly on the left or right side of door and connected to door drive shaft.

Electrical Characteristics:

Phase: Three phase.

Volts: **[208 Volt.] [230-240 Volt.] [460-480 Volt.] [575 Volt.]**

Hertz: 50/60.

***NOTE: Contact the factory for amperage draw – dependent on door operator voltage and product options.***

Operator: Up to 3.35 horsepower.

The motor and gearbox shall be designed for high cycle operation.

Drive System: Heavy-duty drive unit featuring a self-inhibiting worm gear.

Emergency Manual Operation: Motor brake disengagement and chain hoist accessible from the ground level allowing manual opening and closing of the door during a power outage.

Limit Switches: Equip each motorized door with adjustable switches interlocked with motor controls and set to automatically stop door at fully opened and fully closed positions.

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

* + - 1. CONTROL PANEL

***NOTE: Select control panel required for the project – Coordinate with product warranty***

* + - * 1. **[PLC controller housed in a NEMA 4 enclosure.]**

Top and bottom limits to be adjustable from the drive.

Control panel shall include an adjustable, automatic closing timer, emergency stop, two actuating push buttons and a cycle counter.

Control Panel must have a rotary disconnect.

* + - * 1. **[AllStar Variable Frequency Control System.] Option**

Controller housed in a NEMA 4 rated enclosure.

Controls must include a frequency control drive system capable of infinitely variable speed control in both the up and down directions and integrated programmable capability allowing field customization of logic I/O functionality without adding components.

Top and bottom limits to be adjustable from the drive.

Control panel shall include an adjustable, automatic closing timer, emergency stop, two actuating push buttons and a cycle counter.

Control Panel must have a rotary disconnect.

* + - 1. ACTIVATION DEVICES
				1. General: Provide activation devices 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.

***NOTE: Select activation devices from the options below***

* + - * 1. **[Pedestrian Type Activation Devices:]**

**[Single Push Button Switch: Push to open, timer to close.]**

**[Palm Push Button Switch: Large type push button - push to open, timer to close.]**

**[Three Push Button Switch: Button for open, button for close, button for stop.]**

**[Pull Cord: Pull to open - Timer to Close.]**

**[Pull Cord: Pull to Open – Pull to Close.]**

**[Heated Pull Cord: For pull cord applications below 32 deg F (0 deg C). Pull to open - Timer to Close, or Pull to Open – Pull to Close.]**

**[Motion Sensor: BEA Falcon, microwave scanner, field adjustable wide angle.]**

Differentiates between pedestrian and vehicular traffic.

Prevents false activation from cross traffic,

Remote control for set-up.

**[Presence Sensor: BEA IRIS, active infrared.]**

Detects slow moving or non-moving persons or objects.

Prevents premature automatic closing of door when pedestrians working near doorway.

Remote control for set-up.

* + - * 1. **[Vehicular Type Activation Devices:]**

**[Motion Sensor: BEA Falcon, microwave scanner, field adjustable wide angle.]**

Differentiates between pedestrian and vehicular traffic.

Prevents false activation from cross traffic,

Remote control for set-up.

**[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.]**

**[Pull Cord: Pull to open - Timer to Close.]**

**[Pull Cord: Pull to Open – Pull to Close.]**

**[Heated Pull Cord: For pull cord applications below 32 deg F (0 deg C). Pull to open - Timer to Close, or Pull to Open – Pull to Close.]**

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

**[One Button Remote Control.]**

**[Four Button Remote Control.]**

* + - * 1. SAFETY DEVICES
				2. General: Provide safety devices 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.

***NOTE: Select either of the two following safety devices – Light Curtains are strongly recommended if any pedestrian traffic is expected***

* + - * 1. **[Door to be provided with ASSA ABLOY Light Curtain System.]**

Light curtain must be housed inside of the side jamb guide assembly and cover an area to a height of no less than six (6) feet.

Light curtain system must have a minimum of 40 infrared thru-beam optical sensors.

* + - * 1. **[Door to be provided with one (1) set of Through Beam Photo Eyes.]**
				2. Door to be provided with failsafe electric safety edge. Door controller must indicate if the safety edge is not operable.

Connections between the safety edge and controller must be fully wireless. No coil cords allowed.

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

* + - 1. DOOR FABRIC

***NOTE: Select color option for door fabric as required – Coordinate with the door fabric specified for the project***

* + - * 1. **[Styrene Butadiene Rubber (SBR):]**

**[Black]**

**[Tan]**

* + - * 1. [Ethylene Propylene Diene Monomer (EPDM):]

**[Blue]**

**[Grey]**

* + - * 1. Standard color black. Also available in tan SBR, blue, or grey EPDM or Black MSHA (specifications may vary). Temperature ranges of these fabrics are the same as SBR.
			1. GENERAL FINISH REQUIREMENTS
				1. Comply with NAAMM/NOMMA's "Metal Finishes Manual for Architectural and Metal Products (AMP 500-06)" for recommendations for applying and designating finishes.
			2. STEEL FINISHES
				1. Powder-Coat Finish: Manufacturer's standard baked-on finish consisting of prime coat and thermosetting topcoat. Comply with coating manufacturer's written instructions for cleaning, pretreatment, application, and minimum dry film thickness.

Color: Orange.

1. EXECUTION
	* + 1. EXAMINATION
				1. Examine substrates areas and conditions, with Installer present, for compliance with requirements for substrate construction and other conditions affecting performance of the Work.
				2. Examine locations of electrical connections.
				3. Proceed with installation only after unsatisfactory conditions have been corrected.
			2. INSTALLATION
				1. Install high performance overhead coiling doors and operating equipment complete with necessary hardware, anchors, inserts, hangers, and equipment supports; according to manufacturer's written instructions and as specified.
				2. Install high performance overhead coiling doors, hoods, controls, and operators at the mounting locations indicated for each door.
				3. Accessibility: Install high performance overhead coiling doors, switches, and controls along accessible routes in compliance with regulatory requirements for accessibility.
			3. STARTUP SERVICE
				1. Engage a factory-authorized service representative to perform startup service.

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

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

* + - 1. ADJUSTING
				1. Adjust hardware and moving parts to function smoothly so that doors operate easily, free of warp, twist, or distortion.

Adjust exterior doors and components to be weather-resistant.

* + - * 1. Lubricate bearings and sliding parts as recommended by manufacturer.
				2. Adjust seals to provide tight fit around entire perimeter.
			1. CLEANING AND PROTECTION
				1. Clean adjacent surfaces soiled by door installation.
				2. Clean glass and metal surfaces promptly after installation. Remove excess sealants, compounds, dirt and other substances. Repair damages finish to match original finish.
			2. DEMONSTRATION
				1. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain high performance overhead coiling doors.

END OF SECTION 08 33 23.13