Rytec Powerhouse SD High Performance Rubber Door
Available from 6’ wide x 6’ high to 24’ wide x 30’ high
Architectural Specifications

SECTION 08373
HIGH-SPEED RUBBER DOOR

PART 1 – GENERAL

1.01 SECTION INCLUDES

A. High-speed roll up doors.
B. Wiring from electric circuit disconnect to operator to control station.

1.02 RELATED SECTIONS

A. Field painting.
B. Electrical connections.

1.03 REFERENCES

A. NEMA – National Electrical Manufacturers Association.
B. ASTM – American Society for Testing and Materials
C. CUL – Underwriter’s Laboratories, Inc.

1.04 SYSTEM DESCRIPTION

A. Electrical Motor operated unit with manual override in case of power failure.

1.05 SUBMITTALS

A. Submit the following:
   1. Shop Drawings: Indicate pertinent dimensioning, anchorage methods, hardware locations and installation details.
   2. Product Data: Provide general construction, component connections and details, electrical equipment, operation instructions and information.
   3. Samples: Submit sample of door panel.
   4. Manufacturer’s Installation: Indicate installation sequence and procedures, adjustment and alignment procedures.

1.06 MAINTENANCE DATA

A. Recommended preventive maintenance program for scheduled maintenance suggested, manufacturer data sheets, and equipment interconnection diagrams.

1.07 REGULATORY REQUIREMENTS

A. Electrical components UL/CUL listed.
B. Electrical enclosure NEMA approved.

1.08 PERFORMANCE REQUIREMENTS

A. Panel to withstand high pressure and wind loads.
B. Panel to release upon accidental impact and be restored without tools or replacement parts.
C. Electric operator to be direct-drive—no counterbalance or springs.
D. Bottom bar to be wireless.

1.09 QUALITY ASSURANCE

A. Furnish high-speed roll doors and all components and accessories by one manufacturer.

1.10 FIELD MEASUREMENTS

A. Verify field measurements are indicated as shown on shop approval drawings.

1.11 COORDINATION

A. Coordinate the work with installation of electric power and locations and sizes of conduit.

1.12 WARRANTY

A. Two (2) years parts, one (1) year labor on the door.
B. SBR fabric material for the life of the door, labor limited to one (1) year.
C. Two (2) years on electrical, labor limited to one (1) year.

PART 2 – PRODUCTS

2.01 PRODUCTS

A. Rytec Corporation Powerhouse SD high-speed rubber door.
B. No substitutions permitted.

2.02 MATERIALS

A. Door Panel
1. Fabric
a. Styrene butadiene rubber (SBR) panel 1/4” (6.35 mm) thick, made of two 1/8” (3.17 mm) thick layers, 70 durometer; sandwiched with 1-ply, 110lbs (50kg) polyester cord center.
b. Skived seams to connect SBR panel sections on doors under 24 feet wide.

c. Panel includes bonded SBR beveled windlocks, providing normal resiliency and flexibility at temperatures ranging from -40° F to +180°F (-40°C to +85°C). Panels not using a SBR beveled windlock for wind or pressure retention will not be accepted.
d. Windlocks to be segmented (non-continuous) to allow the door panel to effectively release from the side frame in case of accidental impact.
e. Consult manufacturer for other fabric options.

2. Wind and Pressure Resistance
   a. The door design allows for the curtain to remain in the side frame guide in high wind and pressure situations.
3. Other Characteristics
   a. Vertical stripes of PET for reinforcement and visual safety awareness. Doors without vertical stripes will not be accepted.
   b. Standard color black.
   c. Consult manufacturer for other panel materials and color options.

B. Door Header:
1. Truss
   a. Reinforced truss design with angular frame made of steel.
2. Drum Roll
   a. Fabricate minimum 8.5" (216 mm) outside diameter, steel tube with a wall thickness of 0.25” (6.35 mm) steel complying with ASTM A513.
   b. Drive shafts within drum are constructed of 2.75” (69.85 mm) outside diameter steel shafts.
3. Idler Barrel
   a. Front-mounted, fabric guiding (idler) barrel shall be constructed of minimum 4.5” (114.3 mm) outside diameter round tubing with a wall thickness of 0.13” (3.4 mm) to maximum 5.0” (127 mm) outside diameter round tubing with a wall thickness of 0.25” (6.35 mm) and supported by 2” (50.8 mm) diameter steel shafts.
4. End plates
   a. Constructed of minimum ¼” (6 mm) hot-rolled steel laser-cut plates with heavy-duty, self-aligning bearings with cast iron housings.
   b. Bearings shall be load-rated at 14,000 lbs. (6350 kg) dynamic and 9,900 lbs. (4,490 kg) static.
5. Counterbalance System
   a. Direct-drive operator only—no counterbalance. Any doors utilizing counterbalance, torsion springs or sprockets will not be accepted.

C. Side Frames
1. Frames
   a. The structural columns consist of 5 x 2 x ¼” structural steel tubing, welded to a reinforced “Z” mounting bracket (0.22” thick steel) and hinged cover (0.18” thick steel).
2. Wind Resistance
   a. Windstops mounted at bottom of side columns maintain wind resistance in closed position.
3. Paint
   a. Painted with a durable, chemical and corrosion-resistant coating.

b. Standard color is Rytec gray, other colors available upon request.

D. Releasable Bottom Bar

1. Constructed of extruded aluminum and must be of a sufficient width and weight to maintain the bottom edge of the curtain parallel to the door threshold at all times. Doors using steel bottom bars will not be accepted.
2. Design allows for the bottom bar to release from the door without damage after accidental impact or sufficient windload. Doors requiring break-away center sections, notched bottom beams, shear bolts or knock-away sections will not be accepted.
3. After releasing, design allows for the bottom bar and panel to be restored with door controller. Doors requiring tools or replacement parts will not be accepted.
4. A minimum of 6" tall weatherproof rubber loop seal shall be made of EPDM and will be able to seal uneven finished floors.
5. Bottom bars with cords attached will not be accepted.

E. Wireless System

1. Wireless provides continuous and uninterruptible wireless signal which eliminates the need for cords on the bottom bar. Total frequency control eliminates interference.
2. Two-way communication ensures functioning wireless system. Doors without two-way communication to ensure functioning wireless system will not be accepted.

F. Control System

1. Digital controller housed in a NEMA-4X rated enclosure with factory set parameters.
2. Parameter changes and all door configurations can be made from the face of the control box, no exposure to high voltage.
3. Controls include a variable speed AC drive system capable of infinitely variable speed control in both the up and down direction.
4. Programmable inputs and outputs accommodate special control applications without the need for electrical components.
5. Self-diagnostic two-line vacuum fluorescent display (VFD) provides quick and straightforward installation, control adjustments and error reporting.
6. Control panels that require a portable computer unit, additional components, or other devices for programming and/or troubleshooting will not be accepted.
7. Control panels that require opening of the control box and reaching inside to make parameter changes will not be accepted.
8. Control panel (to be configurable in visible English, Spanish or French) communicates when the curtain is broken away and if necessary, how to bring the door back into operation.

G. Electric Operator

1. Door shall be electrically operated by a single direct-drive system. The motor and gearbox shall be designed for high-cycle operation. Basic operation features a manual chain hoist for non-powered operation
2. Door must operate with an AC drive providing soft starting and soft stopping to reduce motor and brake wear. Doors without an AC drive will not be accepted.

3. Door to use absolute encoder to regulate door travel limits. Limits to be adjustable, without the use of tools, from the face of the control panel. Doors using mechanical limit switches, pulse encoders or doors that require tools to access the operator in order to adjust limits will not be accepted.
4. Counterbalance System
    a. Direct-drive operator only. No counterbalance or torsion springs allowed in any size door.

H. Safety Features
1. One (1) in-line light curtain (mounted within side frame) projects a safety curtain directly in line with the panel, from the ground level to approximately 72” (1.82 m) in height. If an object interferes with the beams, the door must reverse automatically. Doors with light curtains mounted outside of the door line will not be accepted.
2. Four (4) threshold warning light strips include amber and red LED lights located on the front and back of both the left and right side columns to indicate door closing for added safety at the threshold. All wiring for warning lights to be concealed within the door construction.
3. Bottom bar to include a failsafe electric edge that must automatically reverse the door upon bottom edge impact.
4. Bottom bar will contain a kill switch that ceases door movement when the door is impacted. Doors which movement continues after impact will not be accepted.

I. Speed
1. Door to operate at a variable speed up to 50 inches per second, maximum speed is dependent on the size of the door and the type of controller and operator.
2. Door to use absolute encoder to regulate door travel limits. Limits to be adjustable, without the use of tools, from the face of the control panel. Doors using mechanical limit switches, pulse encoders or doors that require tools to access the operator in order to adjust limits will not be accepted.

PART 3 – EXECUTION

3.01 EXAMINATION

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

3.02 INSTALLATION

A. Install door assembly in accordance with manufacturer's instructions.

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

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

D. Coordinate installation of electrical service. Complete wiring from disconnect to unit components.

E. Touch-up paint on frame and other painted surfaces in accord with painting section.

1. Upon completion of installation, including work by other trades, lubricate, test and adjust doors to operate in accordance with manufacturer's product data. Final adjustments shall be made by manufacturer's authorized representative.
2. Protect finished installations until Date of Substantial Completion. Repair damage to door panel, hardware and operators.

3.03 ADJUSTING

A. Adjust door and operating assemblies.

B. Test and adjust door, if necessary, for proper operations.

3.04 CLEANING

A. Clean door and components.

END OF SECTION