

Architectural Specifications
HD SERIES Chain Drive High-speed
Sprung Rubber Door
Model HD-SD 3050



PART 1 – GENERAL

1.1 SECTION INCLUDES

1.1.2 Steel channel door frames and reinforcing steel. Section 05500.

1.1.3 Electrical power supply. Division 16, Electrical.

1.2 DESIGN CRITERIA

1.2.1 Rolling door to have NEWGEN® Guide and Curtain Lok™ system to provide a near airtight seal and knock-away feature for easy reassembly upon impact.

1.2.2 After accidental impact, door must be capable of reset from ground level without the use of ladders, tools or lift equipment.

1.2.3 Rolling door SBR curtain for service temperature range of -40°C to +85°C (-40°F to +180°F).

1.3 SAMPLES

1.3.1 Submit samples in accordance with Section 01340 [Division 1 - General Requirements] - Shop Drawings, Product Data, Samples and Mock-Ups.

1.4 SHOP DRAWINGS

1.4.1 Submit shop drawing in accordance with Section 01340 [Division 1 - General Requirements] - Shop Drawings, Product Data, Samples and Mock-Ups.

1.4.2 Indicate each type of door arrangement of hardware, required clearances, electrical characteristics including voltages, size of motors, auxiliary controls and wiring diagrams.

1.4.3 Indicate assembly details and dimensions of fabrication, required clearances and electrical connections.

1.5 MAINTENANCE DATA

1.5.1 Provide operation and maintenance data for the Model HD-SD 3050 door and hardware for incorporation into manual specified in Section 01730 [Division 1 - General Requirements] – Operation and Maintenance Manual.

1.5.2 Maintenance data shall include:

- a complete description of operation in order of task
- wiring diagrams showing all electrical connections
- a list of parts requiring replacement
- a parts list with illustrations and identifications
- identification numbers for each door

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1.6 QUALITY ASSURANCE

1.6.1 Installer with factory-approved qualifications.

PART 2 – PRODUCTS

2.1 PRODUCTS

2.1.1 The acceptable rubber roll-up door is to be the Model HD-SD 3050 spring counterbalanced design as manufactured by Hörmann.

2.1.2 Substitutions will not be accepted.

2.2 CURTAIN

2.2.1 Two (2) layers of Styrene Butadiene Rubber (SBR) each 3.2 mm (1/8 in) thick, 70 durometer, reinforced with 1-ply, 50 kg (110 lb) polyester cord centre. Overall thickness is 6.4 mm (1/4 in). Material provides normal resiliency and flexibility at temperatures ranging from -40°C to +85°C (-40°F to +180°F).

2.2.2 Complete with molded Curtain Loks™ that are mechanically attached to the vertical edges of the curtain material. This retention system maintains and holds the curtain in guides under heavy windload conditions.

2.2.3 Continuous glued SBR windlock or moulded in place Teflon windlock designs will not be accepted.

2.2.4 Standard Color: Black. Also available in Blue or Grey EPDM, Black nitrile, flame-retardant self-extinguishing Black MSHA rated.

2.3 GUIDES

2.3.1 Side curtain retention: NEWGEN® 5 inch Guides shall be one-piece extruded aluminum to form a slot of sufficient depth to allow the Curtain Lok™ to move freely in the guides at all times. Aluminum members are to be of sufficient thickness and rigidity to maintain the Curtain Lok™ within the guides during normal operation while enabling the Curtain Lok™ to release during accidental impact.

2.3.2 Steel guides (bolted or spring-loaded) will not be accepted.

2.3.3 Side frame: Galvanized steel (10 gauge) mounting angles with reinforcement brackets are provided for installation directly onto concrete or steel door framing. Additional customization of door frame is not required.

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2.4 BOTTOM RAIL

2.4.1 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 aluminum extrusion and shall have a pivoting knock-away bottom bar arm on each end to reduce the risk of damage during accidental impacts.

2.4.2 Knock-away bottom bar to be reset without the need to open side frames. Single angle design will not be accepted.

2.5 ROLL-UP DOOR SYSTEM

2.5.1 The curtain is to be rolled on a barrel of sufficient size to carry the door load with a deflection of not more than 2.5 mm/m (.03 inch per foot) of opening width. Drive shaft in the barrel is to be constructed of minimum 63.5 mm (2½ in) C1018 cold rolled steel shafts.

2.5.2 Door shall be designed to operate safely with the use of a spring counterbalance system (i.e. – sprung design).

2.5.3 The Idler Barrel shall be constructed of 159 mm (6.259 in) OD galvanized round HSS structural tubing with a minimum wall thickness of 4 mm (0.157 in) and supported by 50.8 mm (2 in) C1018 cold rolled steel shafts at either end. Idler must be guide mounted not end bracket mounted for proper tracking of curtain into NEWGEN® Guides.

2.5.4 End brackets are constructed of 6 mm (¼ in) hot rolled, zinc coated steel plate c/w sealed heavy-duty, self-aligning bearings with cast iron housings to support the drive barrel. Drive shaft bearing shall be load rated at 3405 kg (7490 lb) dynamic and 2555 kg (5620 lb) static.

2.5.5 Welded Truss shall brace endplates together at the top and bottom with C3 x 4.1 channel and 2 in x ¼ in flatbar diagonal bracing.

2.6 REVERSING DEVICE

2.6.1 Door to be equipped with a failsafe light curtain to stop and reverse door when there is an obstruction in the door opening. Light curtains must be mounted inside the aluminum guides on both sides of the door to maintain proper alignment, protect area directly under the door and to protect the door from vehicular impact.

2.6.2 Light curtains mounted outside the guides will not be accepted.

2.7 ACCESSORIES

2.7.1 Various accessories are available, for example: radio controls, motion sensors, photo eyes, safety edges, loop detectors, pull cords, traffic lights, etc.

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2.8 CONSTRUCTION

2.8.1 Doors: constructed of steel, aluminum and SBR rubber/woven curtain.

2.8.2 Structural elements: assembled by welding or by mechanical fasteners.

2.9 OPERATION OF DOOR

2.9.1 Doors shall be equipped for operation by:

- a) electric operator
- b) manual chain hoist
- c) inertia brake must be non-drive side mount

2.10 MANUAL OPERATION

2.10.1 Emergency manual chain hoist shall be provided to allow manual door operation.

2.10.2 Chain hoist shall be of sufficient capacity to operate a door at a maximum pull requirement of 9 to 14 kg (20 to 30 lb). The static load on the hand chain to hold the door in any position must not exceed 5 kg (11 lb).

2.11 ELECTRICAL OPERATION

2.11.1 Electric door operators shall be CSA/UL approved, high RPM, heavy-duty helical gear type complete with pre-wired, number coded control cabinet as required, to manufacturer's standard. Cabinet enclosure to be NEMA 4X rating and wiring shall be completed by manufacturer.

2.11.2 Motor to be TEFC, high-starting torque, flange & foot mount, hoist-type, operating through a parallel helical gear reducer mechanism. The gear reducer is mounted on a heavy-duty base of 5/16 inch steel. Worm gear reducer will not be accepted.

2.11.3 Motor and sprocketing to be of capacity to open door at maximum speeds of up to 50 inches per second, depending on door size to manufacturer's standard, rated for X horsepower, X voltage, X phase, X frequency.

2.11.4 Operator shall be equipped with rotary screw-type limit switches to control open and close door positions as well as an electro-mechanical brake system to stop and hold door in any position to manufacturer's standards.

2.11.5 Operator shall be equipped with built-in manual emergency chain hoist. Built-in electrical interlock shall prevent motor operation during use of manual chain hoist.

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2.11.6 Control Box

- a) Enclosure shall be NEMA 4X and wiring shall be completed by manufacturer and shall be UL listed.
- b) Drive system shall be controlled by programmable logic controller (PLC) complete with variable frequency drive for soft start and soft stop door operation.
- c) Motor control by a reversing contactor is not acceptable.
- d) Control box shall have fused primary power, adjustable closing timer, three (3) push buttons for open, close and stop functions, push/pull mushroom button E-stop and a cycle counter.

2.11.7 Control box without variable frequency drive will not be accepted.

PART 3 – EXECUTION

3.1 INSTALLATION

3.1.1 Install doors in accordance with manufacturer's printed instructions.

3.1.2 Install electrical motors, controller units, push-button stations and other electrical equipment required for door operation.

3.1.3 All electrical wiring including power supply, control and interface located near the door to be installed by an electrical contractor (to be put into electrical contractor's specification).

3.1.4 Upon completion of the door and electrical installation, the door installer must make necessary adjustments to the door to ensure smooth operation.