MODEL “HDXL 9” Heavy Duty Extra Large Doors

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PART 1 - General

1.1 SECTION INCLUDES:

.01 Steel tube door frames and reinforcing steel. Section 05500.

.02 Electrical power supply. Division 16, Electrical.

1.2 DESIGN CRITERIA

.01 Rolling door to have NEWGEN® II Guide and Curtain Lok™ system to provide a near airtight seal.

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

.03 Counterbalance springs to be outboard 50,000 cycle.

.04 Rolling door curtain and assembly, in the down position, to withstand windloads 90 mph (20.6psf).

1.3 SAMPLES

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

1.4 SHOP DRAWINGS

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

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

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

PART 1 - General

1.5 MAINTENANCE DATA

.01 Provide operation and maintenance data for the Model “HDXL 9” door and hardware for incorporation into manual specified in Section 01730 [Division 1 - General Requirements] - Operation and Maintenance Manual.

.02 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

1.6 QUALITY ASSURANCE

.01 Installer with Factory-Approved qualifications.

PART 2 - PRODUCTS

2.1 PRODUCTS

.01 The acceptable material for the roll-up door is to be as per the Model “HDXL 9” Door System as manufactured by TNR Industrial Doors or approved equal.

.02 Substitutions will not be accepted.

2.2 CURTAIN

.01 Two (2) layers of Styrene Butadiene Rubber (SBR) each 3.2mm (1/8") thick, 70 durometer; sandwiched with 1-ply, 50kg (110 lbs.) polyester cord centre. Material provides normal resiliency and flexibility at temperatures ranging from -40° F to +180°F (-40°C to +85°C)

.02 Complete with molded NEWGEN II 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 extreme windload conditions. Continuous SBR windlock or molded-in place Teflon windlock designs will not be accepted.

PART 2 - PRODUCTS

2.2 CURTAIN (cont’d)

.03 Standard Color: Black
Also available in blue or gray EPDM, Black nitrile, flame-retardant self-extinguishing black MSHA rated.

2.3 GUIDES

.01 Side curtain retention: NEWGEN II Guides shall be constructed of extruded aluminium with a slot of sufficient depth to allow the NEWGEN II Curtain Lok™ to move freely in the guides at all times. The aluminium extrusion is of sufficient thickness and rigidity to maintain the NEWGEN II Curtain Lok™ within the guides.

.02 Side frame: Mounting steel tube assembly is provided for installation directly onto steel door framing.

2.4 BOTTOM RAIL

.01 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 5 9/16” HSS round tube with a pivoting bottom bar arm at each end. A 1/8” thick EPDM rubber loop shall be installed to the bottom bar to help seal against the floor.

2.5 ROLL-UP DOOR SYSTEM

.01 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" per foot) of opening width and is to be evenly balanced by 50,000 cycle oil-tempered, helical outboard torsion springs. Both the drive barrel shafts are to be constructed of minimum 64mm (2 1/2") C1018 Cold Rolled steel shafts.

.02 The Idler Barrel shall be constructed of 168mm (6 5/8") O.D. round H.S.S. tubing with a minimum wall thickness of 4.8mm (.188") and supported by 38mm (1 1/2") C1018 Cold Rolled steel shafts at each end. Idler must be guide mounted not end bracket mounted for proper tracking of curtain into NEWGEN® II Guides.

PART 2 – PRODUCTS

2.5 ROLL-UP DOOR SYSTEM (cont’d)

.03 A secondary idler barrel must be end bracket mounted to help guide and hold the curtain under heavy wind loads and shall be constructed of 168mm (6 5/8”) OD round HSS tubing with a minimum wall thickness of 4.8mm (.188”) and supported by 38mm (1 ½”) C1018 cold rolled steel shafts at each end.

.04 End brackets are constructed of 13mm (1/2") hot-rolled steel plate c/w sealed, heavy-duty, self-aligning bearings with cast iron housings to support the drive barrel. Bearings shall be load-rated at 5000 kg (11023 lbs.) dynamic and 3000 kg (6614 lbs.) static.

.05 Welded Truss shall brace endplates together at the top and bottom with 5”x3”x.188” HSS and C4 x 5.4 channel diagonal bracing.

2.6 ACCESSORIES

.01 Various accessories are available i.e.: radio controls, motion sensors, loop detectors, pull cords, traffic lights, thru-beam photocells, pneumatic reversing edge, etc.

2.7 CONSTRUCTION

.01 Doors: constructed of steel and SBR rubber/woven curtain.

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

2.8 OPERATION OF DOOR

.01 Doors shall be equipped for operation by:

1- electric operator
2- manual chain hoist

PART 2 - PRODUCTS

2.9 MANUAL OPERATION

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

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

2.10 ELECTRICAL OPERATION

.01 Electric door operators shall be CSA/UL approved, Model HG, heavy-duty gearhead type c/w pre-wired, number coded control cabinet as required, to manufacturer’s standard. Panel enclosure to NEMA-4 rating.

.02 Motor to be T.E.F.C., 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" steel.

.03 Motor and sprocketing to be of capacity to open door at maximum speeds of up to 12" per second, depending on door size to manufacturer’s standard, rated for X-HP power, “X” Voltage, “X”-phase, “X” Hz.

.04 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.

.05 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.

.06 Standard operation is Constant Pressure to Close. The door will only close while the close button is being pressed. Releasing the close button will cause door to come to a full stop.

PART 2 - PRODUCTS

2.10 ELECTRICAL OPERATION (cont’d)

.06 Control Panel:
Panel enclosure shall be NEMA-4 and wiring shall be completed by manufacturer and shall be UL listed. Drive system shall be controlled by programmable logic controller (PLC). Optional custom designed control system and/or components are available. Control panel shall have adjustable closing timer, three push buttons for open, close and stop functions and a cycle counter.

PART 3 - EXECUTION

3.1 INSTALLATION

.01 Install doors in accordance with manufacturer’s printed instructions.

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

.03 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).

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