



Architectural Specifications

Model CHILLFAST Direct Drive Freezer Door

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Model CHILLFAST

PART 1 - GENERAL

- 1.1 SECTION INCLUDES:
 - .01 Steel channel door frames and reinforcing steel. Section 05500.
 - .02 Electrical power supply. Division 16, Electrical.
- 1.2 DESIGN CRITERIA
 - .01 Rolling door to include extruded aluminum guide design with anodized finish. Includes guide inlay to provide curtain retention.
 - .02 Insulated, composite fabric curtain 12 mm ($\frac{1}{2}$ ") thick with thermal resistance of $0.218 \text{ m}^2 \cdot \text{K/W}$ (R-value 1.24).
- 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.

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PART 1 – GENERAL

1.5 MAINTENANCE DATA

.01 Provide operation and maintenance data for the Model CHILLFAST 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 freezer door is to be the Model CHILLFAST springless design as manufactured by TNR Industrial Doors.

.02 Substitutions will not be accepted.

2.2 CURTAIN

.01 A composite layered construction constitutes the insulated curtain, nominally 12mm (1/2") thick with thermal resistance of 0.218 m²·°K/W (R-value 1.24). The external layers are 22 ounce polyester reinforced PVC fabric that is USDA/FDA compliant. The composite curtain construction provides a flexible curtain down to a temperature of -30°C (-22°F). Curtain locks installed along both edges of curtain provide curtain retention under wind pressure but release undamaged in case of accidental impact with door.

.02 Standard Color: Blue Exterior/Interior

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PART 2 - PRODUCTS

2.3 GUIDES

- .01 The guide system is constructed from two aluminum extrusions, with a full length heater integrated to prevent ice build-up. Two UHMW-PE strips on the front and back of each guide, provides excellent wear characteristics and allow low maintenance to the guide system. Integrated channels within the guide provide for cable routing. Guides include aluminum inlay curtain retention profiles with UHMW-PE strips at front and back of each inlay. 18 ounce vinyl loop guide seals prevent air infiltration past curtain.
- .02 Guides are installed directly onto concrete or steel door framing. Additional customization of door frame is not required. Predrilled holes provide easy attachment to the door frame. Guides include a vinyl thermal break installed between aluminum guide and concrete or steel door framing and floor.

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. Bottom bar shall be soft/flexible to prevent serious injury if in accidental contact with a person. Bottom bar shall include a heater along its full length to prevent any ice build-up between the curtain and the floor at all times.

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 (0.03 in/ft) of opening width. Drive shafts on the extruded aluminum barrel are to be constructed of stainless steel with zinc dichromate plating. Drive shaft lengths do not vary; Aluminum barrel length will vary depending on the opening width of the door.
- .02 Door shall be designed to operate safely without the use of a counterbalance system (springless design).

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PART 2 – PRODUCTS

.03 End brackets are constructed of hot rolled steel plate with zinc dichromate finish. End brackets have sealed, self-aligning bearings with cast iron housings to support the drive barrel. Drive shaft bearing shall be load-rated at 2960 kg (6530 lbs) dynamic and 1830 kg (4030 lbs) static.

.04 An aluminum idler roller is mounted on the end brackets to ensure that the curtain transitions smoothly from the drive barrel to the guide system.

.05 Standard one-piece roll cover hood with cable routing channel.

2.6 REVERSING EDGE

.01 Door to be equipped with reversing sensing edge to stop and reverse door to manufacturer's standard. A vinyl loop shall wrap the reversing edge. Both the reversing edge and vinyl loop must be replaceable without removing the bottom bar from the curtain.

2.7 CONSTRUCTION

.01 Doors: constructed of plated steel, stainless steel, aluminum and composite fabric curtain.

.02 Structural elements: assembled by mechanical fasteners.

2.8 OPERATION OF DOOR

.01 Doors shall be equipped for operation by:

- a) electric operator
- b) manual chain hoist

2.9 MANUAL OPERATION

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

2.10 ELECTRICAL OPERATION

.01 Electric door operators shall be UL certified, high RPM, heavy-duty worm gear type c/w pre-wired, number coded control cabinet as required, to manufacturer's standard. Panel enclosure to NEMA 4X rating.

.02 Motor to be NEMA 4, high starting torque, direct drive, hoist-type, operating through a worm gear reducer mechanism. Sprockets and chains will not be accepted.

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PART 2 - PRODUCTS

2.10 ELECTRICAL OPERATION

- .03 Motor to be of capacity to open door at maximum speed of up to 2.41 m/s (95 ips), depending on door size to manufacturer's standard, rated for X horsepower, X voltage, X phase, X frequency.
- .04 Operator shall be equipped with digital encoder limits to control the 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 operation. Built-in electrical interlock shall prevent motor operation during use of manual chain hoist.
- .06 Control Panel:
Panel enclosure shall be NEMA 4X and wiring shall be completed by manufacturer and shall be UL listed. Drive system shall be controlled by a circuit board with built in frequency drive. Control panel shall have primary power disconnect, adjustable closing timer, three (3) push buttons for open, close and stop functions, push/pull mushroom button E-stop 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.