
PART 1 GENERAL

1.1 REFERENCE

- .1 Comply with the General Conditions of the Contract, Supplementary General Conditions and the requirements of Division 1.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- .1 Masonry Section 04200
- .2 Sealants Section 07900
- .3 Miscellaneous Metals Section 05500
- .4 Miscellaneous Glass and Glazing Section 08800
- .5 Electrical Section 16000

1.3 SCOPE OF WORK INCLUDED

- .1 Work consists of supply and installation of overhead sectional garage doors, associated hardware, operating components and installing all associated glazing and FRP composite bottom door panels as supplied by Section 08800. Complete all final electrical connections to energize the system and commission the operation of the garage doors. One manufacturer shall be responsible for the complete supply and installation of the overhead sectional garage doors.

1.4 SUBMITTALS

- .1 Submit shop drawings in accordance with Section 01340.
- .2 Shop drawings shall clearly indicate each type of door, entrance and screen, the material being supplied, the wall thickness of the metal parts or the weight of the materials per lineal foot and shall show all connections, motor types and electrical connections, equip location and mounting heights, attachments, reinforcing, anchorage and location of exposed fastenings, sealing and glazing.

1.5 WARRANTY

- .1 Provide a Warranty as stipulated in the General Conditions, but for an extended period of two [2] years from the date of final completion and acceptance of the Work. Warranty shall be signed by both manufacturer and installer.
- .2 The warranty shall cover the repair of the door system components that fail as a result of faulty materials or workmanship due to :
 - 1. loosening of units
 - 2. leaking through and around units
 - 3. fading or discolouration
 - 4. seals of doors

3. Upon written notification from the owner that the doors are defective, promptly repair or replace the defective work at no cost to the owner.

1.6 MAINTENANCE MANUAL

- .1 Provide triplicate set of printed maintenance instructions for inclusion in Data Manual as specified in Division 1.
- .2 Instruct owner's representative on proper care, operation and maintenance for all doors, frames and overhead carriage rails.

PART 2 PRODUCTS

2.1 MANUFACTURERS

2.2 MATERIALS

- .1 Doors to be Thermostop AL-12000 doors as manufactured by Thermostop or Model AL976 as manufactured by Upwardor and supplied by Edwards Door Systems. Door sections and all associated door hardware is to come complete from one manufacturer. A letter will be required to acknowledge from the manufacturer of the door to verify compliance and warranty requirements.
- .2 AL-12000 sections shall be 44mm (1 ¾" thick) and extruded from 6063-76 heat treated alloy. Finish to be clear anodized on all sections. Wall thickness to a minimum of .070 on all aluminum, and reinforced to .115 thickness at all hardware mounting locations. End stiles, top rails and bottom rails to a minimum width of 146 mm (5 ½") with centre stiles a minimum width of 42 mm (2 5/8"). If reinforcing struts are used to strengthen the sections, they are to be an integral part of the section (not a separate component). Reinforcing struts will not be allowed on the bottom section.

Bottom section to be 1.02 (18 ga) kick proof panels set in U shaped vinyl gaskets.
- .3 Clear glazing to be 13 mm (½") thick sealed glass units to be supplied by Section 08800 and installed by this Section. Tinted green glazing to be 13 mm (½") thick sealed glass units to be supplied by Section 08800 and installed by this Section (AT TOP OF DOORS - SEE ELEVATION DRAWING)

Bottom Section to have solid panels that consist of textured stippled fibreglass reinforced panels (FRP white colour both sides) laminated on the inside and outside of waterproof sheets to create a maximum thickness of 13 mm (½"). FRP panel to be supplied by Section -08800 and installed by this section. Contact Auralite Panel Products at 416-259-9625 for FRP Panels.

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- .4 Tracks: Track configuration to be 80 mm (3"). Vertical and horizontal racks shall be formed from 2.8 mm (12 ga) galvanized steel. Vertical tracks shall be taper mounted for a wedge tight closing.
 - .5 Continuous track angle: Track angle, formed from 2.8 mm (12 ga) galvanized steel. Shop welded to the tracks for maximum rigidity.
 - .6 Rollers: shall be 80 mm (3") in diameter and equipped with 6mm (1/4") diameter ball bearings running in hardened inner and outer racers. Roller stem shall be heavy cold rolled steel. Long stem rollers shall be supplied with double end hinges.
 - .7 Top roller covers: shall be galvanized steel, adjustable type to permit the door to be butted against the lintel for maximum weather seal (2.3m [13ga] thick).
 - .8. Bottom corner brackets: shall be 13 ga galvanized steel adjustable type.
 - .9 Hinges: shall be 2.4 (13ga).
 - .10 Torsion springs: shall be oil tempered, vertically wound and designed to withstand a 50,000 cycle for its life.
 - .11 Drum: shall be of die cast aluminum alloy. Each drum shall have guarded cable entry. Cable adjustment shall be controlled with set screws from the free side of the drums.
 - .12 Cables: shall be galvanized aircraft type with construction of 7 x 19 with a safety factor to suit a minimum 100,000 cycles for life.
 - .13 Shaft: shall be 1 ¼ solid cold rolled cross header shaft keyed.
 - .14 Pusher Spring: to be installed at rear of each horizontal track.
 - .15 Weather Stripping: Aluminum and vinyl stoppers made of an EDPM rubber retained in an aluminum extrusion. Shall be adjustable for an effective seal and installed on horizontal lintel and vertical jambs.

2.3 OPERATION:

- .1 Equip each door for operation by heavy duty electrical operator.
- .2 Electrical Operators:
 - .1 Operator to be Model MGH by Manaras Inc. 575 V, 1 HP, 3 Phase or GH by Doorlec. 1 HP / 208 / 3 phase Shop drawings to coordinate required power connection to electrical distribution system

- .2 Operator to be provided with floor level disconnect in case of power failure.
- .3 Operator to come complete with 1 HP motor , solenoid brake, relay type limit controls, overload protection, worm gear operation, and adjustable automatic friction clutch.
- .4 Operator to be provided with Emergency Chain Hoist with Floor level disconnect in case of power failure.
- .5 Each door to have a 3 push button open-close-stop" control station that is part of a control panel with EEMAC 1 " GENERAL PURPOSE " RATING. Unit to be installed at eye level to facilitate service and maintenance of the units. Control panel is also to include a single timer adjustable from 0 - 120 seconds, and a door cycle counter. Momentary contact " Mushroom Head " push button control is to be located adjacent to the control panel for hook up to the panel for use in emergency opening conditions. Wiring provided by Section 16. Final electrical hook up by door installers.
- .6 Spreader bar is used between operator drive shaft and door spring shaft at each door location.
- .7 An audible horn consisting of an electromagnetic solid state circuit built into a cast aluminum waterproof housing to be installed at each door location. When door is in motion and audible sound is to warn drivers, etc. that the door is in operating mode.
- .8 Two sets of Thru-Beam Photos Eyes are to be included at each door opening. To meet a minimum standard of Allen-Bradley quality. One is to be located at approx 3' above finish floor, and the other is to be located at the highest point of truck body part. Phot-eye is to reverse door direction if the phot eye beam is broken. All electrical wiring to energize the overhead door thru beam photo eyes are to be performed by this section (concealed wiring within the masonry wall is desired where possible)
- .9 Note all push button door operators for overhead door, and door motors are to be justified to the drivers side of the Fire Engine door / Ambulance Door.
- .10 Each door is to have **6 power operator remote control operators** for Station Dept staff to operate the door internal or external to the Station. Receiver for connection to control panel to signal reversal of the door, are to be included with each door system.

- .11 Mounting heights for the 3 (Three) Type 'U' (red / green) traffic light fixtures shall be 2300mm from finished floor. These fixtures are located to convey to the fire truck drivers that the overhead door is completely open **prior** to driving the firetruck out of the station(ie. Top avoid hitting the overhead door when the door is not completely up).
- .13 Overhead Door Timer
All three (3) overhead doors shall be equipped with timers and 4-button (up, down, stop, timer) control switches at each door location.

PART 3 EXECUTION

3.1 EXAMINATION

A **CO-ORIDNATION MEETING** conducted by the General contractor will insure the correct placement of all electrical component parts for the correct, complete installation and operation of the aluminum overhead doors. The minimum subtrades to attend are : Aluminum Door Manufacturer/ installer with shop drawings in hand / electrician, mason, miscellaneous metal support rails. The Fire Department, the City Project Manager, Architect and Electrical Engineer are to attend to confirm the above and to insure that '**no surface electrical conduit** ' has been proposed as this will not be accepted by the Architect.

- .1 Install doors and hardware in accordance with manufacture's standards.
- .2 Touch-up doors with paint where anodized finish damaged during fabrication.
- .3 Install electrical motors, controller units, push-button stations, relays and other electrical equipment required for door operation.
- .4 Installation includes final electric connection, and ensure proper safety functions are working.
- .5 Lubricate springs and adjust door operating components to ensure smooth opening and closing of doors.
- .6 Adjust weather-stripping to form weather tight seal against the elements.
- .7 Advise Fire Department of the correct operation and provide advise as to the manufacturer's recommendation for ongoing service maintenance for the doors, components.

3.2 CLEANING

- .1 Final cleaning in accordance with Division 1

- .2 The overhead door subcontractor shall be fully responsible for the removal of protective coatings and the cleaning of the aluminum, steel and glass.

Note interior dryfall paint application of inner structural shell of Apparatus Bays (any paint that is discovered on the Overhead Doors or the operators shall be removed by the paint applicator).

- .3 The decision as to when this work shall be done shall be mutually agreed between the Consultant, the Contractor and Work of this Section.
- .4 Clean all glass, removing excess sealant, at completion of the installation.
- .5 Advise General Contractor of proper cleaning procedure at time of Contract close out.

END OF SECTION