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DIVISION 8

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METAL DOORS AND FRAMES

1. GENERAL

1.1 Work Included

- .1 Non-rated and fire rated rolled steel frames
- .2 Non-rated and fire rated hollow steel door
- .3 Interior window frames

1.2 Related Sections

- .1 Door Hardware: Section 08700
- .2 Painting: Field painting of frames: Section 09900
- .3 Electrical: Electrical Hardware: Division 16

1.3 References

- .1 Canadian Steel Door and Frame Manufacturers Association - Manufacturing Standard for Steel Doors and Frames
- .2 Canadian Steel Door and Frame Manufacturers Association - Canadian Fire Labelling Guide for Steel Doors and Frames

1.4 Quality Assurance

- .1 Conform to requirements of Canadian Steel Door and Frame Manufacturers Association Standards.
- .2 Fire rated construction to conform to ULC standards.

1.5 Shop Drawings and Product Data

- .1 Submit Shop Drawings and product data to requirements of Section 01300.
- .2 Indicate on Shop Drawings, frame configuration, anchor types and spacings, location of cutouts for hardware, reinforcement and finish.
- .3 Indicate on Shop Drawings, door elevations, internal reinforcement, and closure method, and location of cutouts for glazing.

METAL DOORS AND FRAMES

2. PRODUCTS

2.1 Acceptable Manufacturers

- .1 Macotta
- .2 Allmar
- .3 Shanahans

2.2 Frames

- .1 Type/Size: as shown on Drawings and Schedules
- .2 Frames: 1.52 mm (16 gauge) cold rolled sheet steel with ZF75 Colourbond coating
- .3 Bumpers: resilient rubber
- .4 Anchors: purpose made to rigidly secure frames, 3 per jamb
- .5 Mortar Guard Boxes: 0.76 mm (22 gauge) welded in place
- .6 Primer: zinc chromate type
- .7 Insulation: fibreglass

2.3 Doors

- .1 Insulated Core Doors: minimum 1.21 mm (18 gauge) surface sheets, and top and bottom end channels; cores filled with insulation.
- .2 Honeycomb Core Doors: minimum 1.21 mm (18 gauge) surface sheets and 1.21 mm (18 gauge) thick top and bottom end channels; cores filled with honeycomb material laminated under pressure to surface sheets.
- .3 Reinforcement for hardware:
 - .1 Locks: minimum 1.52 mm (16 gauge) steel
 - .2 Butts: minimum 3.42 mm (10 gauge) steel
 - .3 Flush Bolts: minimum 3.42 mm (10 gauge) steel
 - .4 Door Closures: minimum 1.9 (14 gauge) mm steel
 - .5 Door Holders: minimum 1.9 mm (14 gauge) steel

METAL DOORS AND FRAMES

- .4 Glazing Stops: minimum 0.91 mm (14 gauge) rolled steel channel shape, butted corners; 16 mm high profile; prepared for countersink screws.
- .5 Glazing: as per Section 08800

2.4 Fabrication - Frames

- .1 Fabricate frames as welded unit.
- .2 Fabricate frames with hardware reinforcement plates welded in place. Provide mortar guard boxes.
- .3 Prepare frame for silencers. Provide three (3) single silencers for single doors and mullions of double doors on strike side, and two (2) single silencers on frame head at double doors without mullions.
- .4 Attach channel spreaders at bottom of frames for shipping.
- .5 Reinforce exterior frames at lock side, to prevent frame distortion.

2.5 Fabrication - Doors

- .1 Fabricate hollow metal doors and panels in accordance with requirements of "Canadian Manufacturing Standards for Steel Doors and Frames" produced by the Canadian Steel Door and Frame Manufacturer's Association and as indicated on Drawings.
- .2 Fabricate fire rated hollow metal doors in accordance with requirements of ULC. Place ULC labels where visible when in installed position.
- .3 All doors in fire rated walls shall be listed and labelled with a maximum temperature rise limitation of 250°F after 30 minutes in accordance with the National Building Code.
- .4 Mechanically interlock longitudinal seams of honeycomb core type doors weld seams and sand flush. Top and bottom of doors closed with end channels recessed and spot welded in place.
- .5 Reinforce and prepare doors to receive hardware. Refer to Section 08700 for hardware requirements.
- .6 Each exterior hollow metal door to be supplied complete with a full length 3.42 mm (10 gauge) anti-intrusion plate welded to latch side of door.

2.6 Roll-up Doors

- .1 Steel exterior & interior skin: minimum 4 mm, roll-formed, hot-dipped galvanized, painted; foamed in place polyurethane core. Section to have nominal thickness of 41 mm with an EPDM thermal break.
- .2 Insulation to have thermal resistance of: 2.63 W/Msq (R14.86)

METAL DOORS AND FRAMES

- .3 End Stiles: 16 gauge steel
- .4 Springs: 25,000 cycles
- .5 Track: 51 mm angle mounted
- .6 Lock: interior mounted slide lock
- .7 Weatherstrip:
- .8 Finish:
- .9 Operation: Chain Hoist with electric operator, $\frac{3}{4}$ HP
- .10 Standard of Acceptance: 'Thermacore Series 591', as manufactured by Overhead Door Corporation.

3. EXECUTION

3.1 Installation

- .1 Install doors and frames in accordance with Canadian Steel Door and Frame Manufacturers Association standards.
- .2 Install roll formed steel reinforcement channels between two abutting frames. Anchor to structure and floor.
- .3 After installation, touch up all scratched or damaged surface and prime.
- .4 Insulate all frames exposed to the exterior.

3.2 Tolerances

- .1 Maximum Diagonal Distortion: 2 mm measured with straight edge, corner to corner.

END OF SECTION

OVERHEAD COILING DOORS

1. GENERAL

1.1 Work Included

- .1 The rolling doors will be Thermotite as manufactured by Kinnear/Wayne-Dalton Corp.

1.2 Related Work

- .1 Opening preparation, miscellaneous or structural metal Work, access panels, finish or field painting, filed electrical wiring, wire, conduit, fuses, and disconnect switches are in the Scope of Work of other Divisions of trades.

2. PRODUCTS

2.1 Curtain

- .1 Curtain will be composed of interlocking steel galvanized prime painted #14 flat slats with galvanized prime painted 24 gauge back panels. The area between #14 slat and back panel will be filled by foaming-in-place with polyurethane insulation, R-value of 6.7. Curtain designed per ASTM standards and capable of withstanding 20 PSF windload. Ends of alternate slats to be fitted with metal windlocks.
- .2 Bottom bar to be comprised of two (2) equal sized structural steel angles, minimum 1/8 inch thick, fitted with vinyl bottom weatherseal. Provide cylinder locks on the bottom bar operable from both sides.

2.2 Guides

- .1 Guides will be of roll-formed steel channels and angles or structural angles of steel to form a slot of sufficient depth to retain curtains in guides to resist 20 PSF windload. Guides will be provided with integral windlock bars and vinyl weatherstripping.

2.3 Brackets

- .1 Brackets will be of steel plates, 3/16 inch minimum, with permanently sealed ball bearings. Designed to enclose ends of coil and provide support for counterbalance pipe at each end.

2.4 Counterbalance

- .1 Curtain to be coiled on a pipe of sufficient size to carry door load with deflection not to exceed 0.03 inch per foot of door span and to be evenly balanced by helical springs, oil tempered torsion type designed with a 25 percent safety factor. Cast iron barrel plugs will be used to anchor springs to tension shaft and pipe.

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2.5 Hood

- .1 Hood will be minimum 24 gauge galvanized sheet metal, flanged at top for attachment to header and flanged at bottom to provide longitudinal stiffness. Hood will enclose curtain coil and counterbalance mechanism. Includes neoprene hood baffle.

2.6 Finish

- .1 Shop coat of rust inhibitive primer on galvanized and non-galvanized surfaces and operating mechanisms. Guides and bracket plates will be coated with a flat black prime paint. Manufacturer's finish to be white.

2.7 Operation

- .1 Door will be operated by means of motor operation. Electric safety edge to be attached to bottom bar to stop the door when it contacts an object during the closing cycle.

2.8 Weatherstripping

- .1 Lintel weatherstripping will be of nylon, weatherseal to effectively reduce air infiltration at lintel, and will be fitted with aluminum extrusion for easy attachment to header.

2.9 Locking

- .1 Electric-motor operation doors will lock through the operator gearing, and electric interlocks will be provided. Cylinder locks will be provided with the doors.

3. EXECUTION

3.1 Install

- .1 Install the doors in accordance with Wayne-Dalton instructions and standards. Installation will be by an authorized Wayne-Dalton representative.

END OF SECTION

DOOR HARDWARE

1. GENERAL

1.1 Work Included

- .1 Hardware for hollow metal doors
- .2 Thresholds and weatherstripping

1.2 Related Sections

- .1 Metal Doors and Frames: Section 08100

1.3 References

- .1 ULC - List of Equipment and Materials, Volume 2

1.4 Coordination

- .1 Coordinate Work of this Section with other directly affected Sections involving manufacturer of and internal reinforcement for door hardware.
- .2 Supply templates to manufacturers of components affected by hardware.

1.5 Regulatory Requirements

- .1 Conform to applicable code for requirements applicable to fire rated doors, frames and hardware.
- .2 Conform to ULC requirements for fire rated doors, frames and hardware.

1.6 Shop Drawings

- .1 Submit Shop Drawings to requirements of Section 01300.
- .2 Indicate on Shop Drawings, locations and mounting heights of each type of hardware.
- .3 Hardware list shall list each door individually and shall list hardware for each door as a described item, not by a code as is done in the specification. Hardware list shall be in terminology understandable by a layman.
- .4 Supply templates to door and frame manufacturer to enable accurate sizes, locations of cut outs, and reinforcement for hardware.
- .5 Provide product data on specified hardware as requested.
- .6 Submit one (1) copy of manufacturers' catalogue cuts of each item, with hardware list.

DOOR HARDWARE

- .7 Put parts lists, manufacturer's instructions, and catalogue cuts into maintenance manual as per Section 01300.

1.7 Delivery and Storage

- .1 Store hardware in locked, dry area in individual packages or like groups.

2. PRODUCTS

2.1 Materials

- .1 As per schedule at end of Section.
- .2 Use one manufacturer's products only for all similar items.

2.2 Door Hardware

- .1 Butts: provide 1-1/2 pair for all doors, except doors over 900 mm wide or over 2200 mm high are to have two (2) pair.
- .2 Protective Plates: supply to both sides of door unless otherwise specified.

2.3 Fasteners

- .1 Supply all fastening devices for installation and operation of hardware.
- .2 All exposed fasteners to be finished to match hardware.
- .3 Use fasteners compatible with material through which they pass.

2.4 Keying

- .1 Door locks: allow for a grand master key system to match existing system.
- .2 Supply three (3) keys for each lock. Supply three (3) master keys for each group, and three (3) grand master keys.
- .3 Key to City's existing G.M.K. system.

3. EXECUTION

3.1 Inspection

- .1 Verify that door and frame components are ready to receive Work and dimensions are as required.
- .2 Beginning of installation means acceptance of existing conditions.

DOOR HARDWARE

3.2 Installation

- .1 Install hardware in accordance with manufacturer's instructions.
- .2 Use the templates provided by hardware item manufacturer.
- .3 Maintain the following mounting heights for doors, from finished floor to centre line of hardware item:
 - .1 Locksets: 1020 mm
 - .2 Dead Locks: 1525 mm
 - .3 Exit Devices: 1020 mm

3.3 Schedule

- .1 Refer to Architectural Drawings

END OF SECTION