

**Part 1            General**

**1.1                RELATED SECTIONS**

- .1        Section 01330 - Submittal Procedures.
- .2        Section 01780 - Closeout Submittals.
- .3        Section 05500 - Metal Fabrications.
- .4        Section 06101 - Rough Carpentry Short Form.
- .5        Section 06200 - Finish Carpentry.
- .6        Section 07900 - Joints Sealers.
- .7        Section 08700 - Door Hardware.

**1.2                REFERENCES**

- .1        Aluminum Association (AA).
  - .1        DAF 45-03, Designation System for Aluminum Finishes.
- .2        American Architectural Manufacturers Association (AAMA).
  - .1        AAMA 609-93, Voluntary Guide Specification for Cleaning and Maintenance of Architectural Anodized Aluminum.
- .3        American Society for Testing and Materials International, (ASTM).
  - .1        ASTM E330-02, Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
- .4        Canadian General Standards Board (CGSB).
  - .1        CGSB 1.40-97, Primer, Structural Steel, Oil Alkyd Type.
  - .2        CAN/CGSB-12.1-M90, Tempered or Laminated Safety Glass.
  - .3        CAN/CGSB-12.20-M89, Structural Design of Glass for Buildings.
- .5        Canadian Standards Association (CSA International).
  - .1        CAN/CSA-G40.20/G40.21-98, General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.
  - .2        CAN/CSA G164-M92, Hot Dip Galvanizing of Irregularly Shaped Articles.

**1.3                SYSTEM DESCRIPTION**

- .1        Design Criteria.
  - .1        Design frames and doors in exterior walls to:

- .1 Accommodate expansion and contraction within service temperature range of -35 to 35 degrees C.
  - .2 Limit deflection of mullions to maximum 1/175th of clear span when tested to ASTM E330 under wind load of 1.2 kpa
  - .3 Movement within system.
  - .4 Movement between system and perimeter framing components or substrate.
- .2 Size glass thickness and glass unit dimensions to limits in accordance with CAN/CGSB-12.20.
  - .3 Design door system to provide average thermal resistance of:
    - .1 Door system (excluding vision glass areas): RSI of 0.50.
    - .2 Vision glass areas: RSI of 0.67.
  - .4 Provide continuous air barrier and vapour retarder through door system. Primarily in line with inside pane of glass and heel bead of glazing compound.

#### **1.4 SUBMITTALS**

- .1 Product Data:
  - .1 Submit manufacturer's printed product literature, specifications and data sheets in accordance with Section 01330 - Submittal Procedures.

#### **1.5 SHOP DRAWINGS**

- .1 Submit shop drawings in accordance with Section 01330 - Submittal Procedures.
- .2 Indicate materials and profiles and provide full-size, scaled details of components for each type of door and frame. Indicate:
  - .1 Interior trim and exterior junctions with adjacent construction.
  - .2 Junctions between combination units.
  - .3 Elevations of units.
  - .4 Core thicknesses of components.
  - .5 Type and location of exposed finishes, method of anchorage, number of anchors, supports, reinforcement, and accessories.
  - .6 Location of caulking.
  - .7 Each type of door system including location.
  - .8 Arrangement of hardware and required clearances.
- .3 Submit catalogue details for each type of door and frame illustrating profiles, dimensions and methods of assembly.

#### **1.6 SAMPLES**

- .1 Submit samples in accordance with Section 01330 - Submittal Procedures.
- .2 Submit one 300 x 300 mm corner sample of each type door and frame.

- .3 Submit sample showing glazing detail, reinforcement, finish and location of manufacturer's nameplates.
- .4 Frame sample to show glazing stop, jointing detail, finish.
- .5 Manufacturer's Instructions:
  - .1 Submit manufacturer's installation instructions.

## **1.7 CLOSEOUT SUBMITTALS**

- .1 Provide maintenance data for cleaning and maintenance of aluminum finishes for incorporation into manual specified in Section 01780 - Closeout Submittals.

## **1.8 QUALITY ASSURANCE**

- .1 Test Reports: certified test reports showing compliance with specified performance characteristics and physical properties.
- .2 Certificates: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
- .3 Pre-installation Meetings: conduct pre-installation meeting to verify project requirements, manufacturer's installation instructions and manufacturer's warranty requirements. Comply with Section.

## **1.9 DELIVERY, STORAGE, AND HANDLING**

- .1 Storage and Protection:
  - .1 Apply temporary protective coating to finished surfaces. Remove coating after erection. Do not use coatings that will become hard to remove or leave residue.
  - .2 Leave protective covering in place until final cleaning of building.

## **1.10 WASTE MANAGEMENT AND DISPOSAL**

- .1 Remove from site and dispose of packaging materials at appropriate recycling facilities.

## **Part 2 Products**

### **2.1 ACCEPTABLE MANUFACTURER**

- .1 Provide sectional doors by Steel-Craft Door Products Ltd., Edmonton, AB PH: (780) 453-3761 Fax: (780) 454-1584

### **2.2 STEEL-CRAFT SECTIONAL OVERHEAD DOORS**

- .1 Trade Reference: Steel Craft Model TD134 or TD138 Sectional Overhead Doors by Steel-Craft Door Products Ltd.

### **2.3 WORK INCLUDED**

Doors shall be sectional overhead type THERM-O-DOR® TD134 or TD138 as manufactured by Steel-Craft Door Products Ltd. Each door shall be supplied as one complete unit including sections, track, brackets, rollers, struts, counterbalance mechanisms, hardware (list options) to suit the opening and headroom available.

### 2.3 RELATED WORK

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

### 2.4 DOOR SECTIONS

Will be roll formed of hot dipped galvanized stucco embossed steel. Sections will be manufactured by a continuous foamed-in-place polyurethane lamination process resulting in a steel-polyurethane-steel sandwich type construction. Steel-Craft Door Products Ltd. utilizes Doffasco, "PREMIER" Galvanized minimized spangle sheet "Pre-coat" commercial steel for the THERM-O-DOR® model TD134 & TD138 polyurethane foam injected door as per the following specification.

Galvanized sheet steel: Commercial steel to ASTM A1008/A1008M CS Z001 G01 zinc coating.

Thickness: 0.016"

Finish: QC456 Prime coat  
QC4654 Finish coat exterior polyester 42-62292-03204

The finish will be two coats baked on polyester with a white interior and white (brown) exterior.

Each section will be 1 3/4" (TD134) or 1 3/8" (TD138) thick providing a calculated R-Value of 16.04 & R12.6 respectively in accordance with industry established guidelines. THERM-O-DOR® sections incorporate a mechanical interlock feature providing a positive mechanical lock on the exterior and interior skins, which also acts as a thermal break. Skins of sections will be ribbed for added strength and utilize ship-lap joints with continuous applied joint seal for weather-tight fit. End caps will be of 16 ga. hot-dipped galvanized steel for the TD134, and 20 ga. Hot-dipped galvanized steel for the model TD138. Bottom section is provided with a "U" shaped all weather vinyl seal to conform to small variations in the floor surface.

### 2.5 HARDWARE

Galvanized hardware to include, graduated end roller hinges, intermediate hinges, adjustable top roller brackets, and bottom fixtures that have cable adjustment, 2" and 3" rollers to have 10 floating ball bearings in case hardened steel races. Doors shall be adequately reinforced with galvanized steel struts as required. Doors 14' wide and over receive the new Steel-Craft Thermal Bow Strap (patent pending) to reduce thermal bowing caused by excessive temperature differentials between the exterior and interior door skins. Double end stiles supplied with two pairs of end roller hinges on doors over 17' wide. Long-stem roller shafts to extended fully through end roller hinges. Include double top fixtures.

Doors over 20'-3" in width shall be reinforced with 6" x 16 gauge "Z" shaped struts.

All doors over 1000 lbs. shall incorporate 11 ga. end hinges. Doors over 1300 lbs. shall be equipped with extra heavy duty top and bottom roller brackets, which accept 3/4" roller shafts.

## **2.6 TRACK**

2" or 3" steel track as required. Vertical tracks to be minimum 16 ga. galvanized steel; tapered and mounted for wedge-type closing. Horizontal tracks to be 14 ga. galvanized steel for 2" track and 12 ga. galvanized steel for 3" track. Vertical tracks to be bracket mounted or continuous angle mounted and fully adjustable for sealing door to jamb. Horizontal track to be adequately reinforced with formed 14 ga. C-channel.

## **2.7 SPRING COUNTERBALANCE**

Heavy duty oil-tempered torsion springs on continuous ball bearinged cross header shaft (solid or tubular shafts as required by size and operation). Cable drums and spring fittings will be made of die-cast high-strength aluminum. Galvanized aircraft quality steel 7 x 19 cable shall provide a minimum 7-1 safety factor. 1/4" cable shall be used on all doors over 1000 lbs. (Long-life springs of 25,000, 50,000, or 100,000 cycles may be specified and are recommended for high usage doors).

Doors over 1300 lbs. utilize 1 1/4" diameter cross header shafts with standard bearings.

Doors over 1600 lbs. utilize 1 1/4" diameter cross header shafts with greasable end bearings in cast iron housings mounted to extra heavy bearing plates.

## **2.8 WINDLOAD**

Doors will be designed to meet or exceed industry standard for windloads as determined by DASMA (Door and Access Manufacturers Association).

## **2.9 LOCK**

Interior mounted (left or right side) spring-loaded side bolt lock shall engage in track. (Optional 5 pin tumbler security side lock, or double bar latch). Master keyed cylinders, if required, to be supplied by others.

## **2.10 WEATHERSTRIP**

Bottom of door to have U-shape all weather vinyl seal designed to conform and seal at the floor surface.

Steel vinyl side weather-strip shall be installed on vertical jambs for an effective seal against the door.

Top of door to have flexible type all weather vinyl seal designed to conform and seat at the horizontal lintel.

Between sections to have a continuous O-shape all weather vinyl seal at joint.

All weather vinyl parts are extruded from the highest quality virgin vinyl and comply with all the requirements specified in commercial standard.

## **2.11 PUSHER SPRINGS**

Optional pusher springs are used to push the door down from a fully open position and to act as a cushion whenever the door is opened quickly.

## **2.12 BOTTOM CORNER SAFETY BRACKETS**

Optional TBRBFS-3 safety brackets are designed to arrest the rapid closing action of an overhead door in the event the lift cables have broken, or have come loose from the cable drums. The safety brackets are required in pairs, and are compatible with vertical lift, hi-lift, or standard lift hardware and where the balanced door weight does not exceed 2200 lbs., equipped with 3/4" cold rolled roller shafts and available for 3" track size only.

## **2.13 GLAZING**

Single or Sealed Thermo units in Glass, Thermoclear Lexan etc.

## **2.14 OPERATION**

### 1- Manual:

- Manually with handles and pull cord or pull chain.
- Manually with chain hoist (Recommended for door over 12' high).

### 2- Electrical Operator:

- The two basic types of operators are Trolley and Jackshaft operators.
- Trolley operators are designed for use on standard lift doors.
- Jackshaft operators are designed for use on high lift, or vertical lift doors.  
(Recommend using Bottom Corner Safety Brackets with this type of operator).
- Electrical motors, controller units, remote push-button stations, relays and other electrical components to meet CSA and ULC approval.

## **2.15 OPTIONS**

Pass Doors, Removable centre post, high wind load conditions, special colors, fail safe bottom roller brackets, track guards, etc.

## **Part 3 Execution**

### **3.1 PREPARATION**

- .1 Take field dimensions and examine conditions of substrates, supports, and other conditions under which this work is to be performed. Do not proceed with work until unsatisfactory conditions are corrected. .

### **3.2 INSTALLATION**

- .1 Strictly comply with manufacturer's installation instructions and recommendations. Coordinate installation with adjacent work to ensure proper clearances and allow for maintenance.
- .2 Instruct City's personnel in proper operating procedures and maintenance schedule.

### **3.3 ADJUSTING AND CLEANING**

- .1 Test sectional doors for proper operation and adjust as necessary to provide proper operation without binding or distortion.
- .2 Touch-up damaged coatings and finishes and repair minor damage. Clean exposed surfaces using non-abrasive materials and methods recommended by manufacturer of material or product being cleaned.

**END OF SECTION**