

## **PART 1 - GENERAL**

### **1.1 REFERENCES**

- .1 American National Standards Institute (ANSI) / Builders Hardware Manufacturers Association (BHMA)
  - .1 ANSI/BHMA A156.1-2013, American National Standard for Butts and Hinges.
  - .2 ANSI/BHMA A156.2-2011, Bored and Preamsembled Locks and Latches.
  - .3 ANSI/BHMA A156.4-2013, Door Controls - Closers.
  - .4 ANSI/BHMA A156.5-2010, Auxiliary Locks and Associated Products.
  - .5 ANSI/BHMA A156.6-2010, Architectural Door Trim.
  - .6 ANSI/BHMA A156.16-2013, Auxiliary Hardware.
  - .7 ANSI/BHMA A156.18-2012, Materials and Finishes.
- .2 Canadian Steel Door and Frame Manufacturers' Association (CSDMA)
  - .1 CSDMA Recommended Dimensional Standards for Commercial Steel Doors and Frames - 2009.

### **1.2 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
  - .1 Submit manufacturer's instructions, printed product literature and data sheets for door hardware and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Hardware List:
  - .1 Submit contract hardware list.
  - .2 Indicate specified hardware, including make, model, material, function, size, finish and other pertinent information.
- .4 Manufacturer's Instructions: submit manufacturer's installation instructions.

### **1.3 CLOSEOUT SUBMITTALS**

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
  - .2 Product Data:
    - .1 Submit manufacturer's instructions, printed product literature and data sheets for door hardware and include product characteristics, performance criteria, physical size, finish and limitations.
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- .3 Hardware List:
  - .1 Submit contract hardware list.
  - .2 Indicate specified hardware, including make, model, material, function, size, finish and other pertinent information.
- .4 Manufacturer's Instructions: submit manufacturer's installation instructions.

#### **1.4 MAINTENANCE MATERIALS SUBMITTALS**

- .1 Extra Stock Materials:
  - .1 Supply maintenance materials in accordance with Section 01 78 00 - Closeout Submittals.
  - .2 Tools:
    - .1 Supply two (2) sets of wrenches for door closers and locksets.

#### **1.5 QUALITY ASSURANCE**

- .1 Regulatory Requirements:
  - .1 Hardware for doors in fire separations and exit doors certified by a Canadian Certification Organization accredited by Standards Council of Canada.
- .2 Certificates: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
- .3 Only recognized contract hardware distributors will be considered for the work of this section. This distributor shall have on staff a qualified Architectural Hardware Consultant recognized by the Door and Hardware Institute or person with equivalent qualifications to assist installers and direct detailing, processing and delivery of material, and certify installation acceptance.

#### **1.6 DELIVERY, STORAGE AND HANDLING**

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.
  - .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
  - .3 Package items of hardware including fastenings, separately or in like groups of hardware, label each package as to item definition and location.
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- .4 Storage and Handling Requirements:
  - .1 Store materials indoors in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
  - .2 Store and protect door hardware from nicks, scratches, and blemishes.
  - .3 Protect prefinished surfaces with strippable coating.
  - .4 Replace defective or damaged materials with new.

## **1.7 MEASUREMENT FOR PAYMENT**

- .1 No separate measurement for payment shall be made for items under this section. Include costs incidental in the Lump Sum Amount of work on the Combined Price Form.

## **PART 2 - PRODUCTS**

### **2.1 HARDWARE ITEMS**

- .1 Use one (1) manufacturer's products only for similar items.

### **2.2 DOOR HARDWARE**

- .1 Locks and latches:
    - .1 Bored and preassembled locks and latches: to ANSI/BHMA A156.2, series 4000 bored lock, grade 1, designed for function as stated in Hardware Schedule.
    - .2 Lever handles: plain design.
    - .3 Roses: round
    - .4 Normal strikes: box type, lip projection not beyond jamb.
    - .5 Cylinders: key into keying system as directed.
    - .6 Finished to ANSI/BHMA 626.
  - .2 Butts and hinges:
    - .1 Butts and hinges: to ANSI/BHMA A156.1.
    - .2 Quality, size and width of hinges in accordance with manufacturer's recommendations and ANSI A156.1.
    - .3 Hinges shall be of the size, type, material and finish as indicated in hardware groups.
    - .4 Interior hinges of steel, unless otherwise noted.
  - .3 Door Closers and Accessories:
    - .1 Door controls (closers): to ANSI/BHMA A156.4, Grade 1 in accordance
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- with ANSI/BHMA A156.4, Table A1, finished to ANSI/BHMA 689.
- .2 Closers of narrow slim line design complete with backcheck, rack and pinion hydraulic action.
- .3 Closers equipped with full cover, as noted in Hardware Groups, complete with secure and concealed mounting screws.
- .4 All manual closers with manufacturer's twenty-five (25) year warranty.
- .5 Adapter plates are used for added reinforcing as well as door and frame conditions. Adapter plates shall be added to any opening if required to suit field conditions or door design.
- .6 Closers shall include all necessary arm brackets, cushion arm supports and blade stop spacers to suit door swing, frame reveals or stop conditions.
- .7 Size and hand closers prior to site delivery in accordance with the manufacturer's recommendations.
- .8 Closers capable of field adjustments of at least fifteen (15) percent.
- .9 Degree of openings to be as shown on the plans and indicated on the reviewed hardware schedule.
- .10 Finished as stated in Hardware Groups.
- .4 Auxiliary hardware: to ANSI/BHMA A156.16, listed in Hardware Schedule.
  - .1 Door stop, floor mounted: finished to ANSI/BHMA 626..
- .5 Door bottom seal: heavy duty, door seal of extruded aluminum frame and solid closed cell neoprene weather seal, surface mounted with drip cap, closed ends, adjustable, clear anodized finish.
- .6 Thresholds: to ANSI/BHMA A156.21, extruded aluminum mill finish, serrated surface, site applied stop with vinyl door seal insert. Provide 50 mm longer than opening to allow fitting at job site. Fasteners of countersunk type suitable to properly install to floor/sill conditions. Supply complete with screw anchors.
- .7 Weatherstripping:
  - .1 Head and jamb seal:
    - .1 Extruded aluminum frame and solid closed cell neoprene insert, clear anodized finish.

## **2.3 FASTENINGS**

- .1 Use only fasteners provided by manufacturer. Failure to comply may void warranties and applicable licensed labels.
  - .2 Supply screws, bolts, expansion shields and other fastening devices required for satisfactory installation and operation of hardware.
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- .3 Exposed fastening devices to match finish of hardware.
- .4 Where pull is scheduled on one side of door and push plate on other side, supply fastening devices, and install so pull can be secured through door from reverse side. Install push plate to cover fasteners.
- .5 Use fasteners compatible with material through which they pass.

## **2.4 KEYING**

- .1 Doors, keyed as directed. Prepare detailed Keying Schedule in conjunction with Departmental Representative.
- .2 Supply keys in triplicate for every lock in this Contract.
- .3 Stamp keying code numbers on keys and cylinders.
- .4 Supply construction cores.
- .5 Hand over permanent cores and keys to Departmental Representative.

## **PART 3 - EXECUTION**

### **3.1 INSTALLATION**

- .1 Manufacturer's Instructions: comply with manufacturer's written recommendations, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.
  - .2 Supply metal door and frame manufacturers with complete instructions and templates for preparation of their work to receive hardware.
  - .3 Supply manufacturers' instructions for proper installation of each hardware component.
  - .4 Install hardware to standard hardware location dimensions in accordance with CSDFMA Canadian Metric Guide for Steel Doors and Frames (Modular Construction).
  - .5 Use only manufacturer's supplied fasteners.
    - .1 Use of "quick" type fasteners, unless specifically supplied by manufacturer, is unacceptable.
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- .6 Remove construction cores when directed by Departmental Representative.
  - .1 Install permanent cores and ensure locks operate correctly.

### **3.2 ADJUSTING**

- .1 Adjust door hardware, operators, closures and controls for optimum, smooth operating condition, safety and for weather tight closure.
- .2 Lubricate hardware, operating equipment and other moving parts.
- .3 Adjust door hardware to ensure tight fit at contact points with frames.

### **3.3 CLEANING**

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
  - .1 Leave Work area clean at end of each day.
  - .2 Clean hardware with damp rag and approved non-abrasive cleaner, and polish hardware in accordance with manufacturer's instructions.
  - .3 Remove protective material from hardware items where present.
  - .4 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.

### **3.4 DEMONSTRATION**

- .1 Maintenance Staff Briefing:
  - .1 Brief maintenance staff regarding:
    - .1 Proper care, cleaning, and general maintenance of projects complete hardware.
    - .2 Description, use, handling, and storage of keys.
    - .3 Use, application and storage of wrenches for door closers and locksets.
- .2 Demonstrate operation, operating components, adjustment features, and lubrication requirements.

### **3.5 PROTECTION**

- .1 Protect installed products and components from damage during construction.
  - .2 Repair damage to adjacent materials caused by door hardware installation.
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### **3.6 SCHEDULE**

- .1 Hardware Group No. 1: (Exterior Door)
  - .1 Three (3) Heavy weight hinges brass or bronze x 5 knuckle x 4 ball bearing 114 mm x 101 mm x NRP - 626.
  - .2 One (1) Lockset x Entrance Function x lever x cyl x strike - 626.
  - .3 One (1) Heavy duty door closer x hold-open arm x mounting plate x AL.
  - .4 One (1) Set weather stripping x neoprene bulb x AL.
  - .5 One (1) Door sweep x neoprene bulb x AL.
  - .6 One (1) 150 mm Deep threshold x door width x AL c/w site applied door stop strip x neoprene bulb x AL.
- .2 Hardware Group No. 2: (Interior Door)
  - .1 Three (3) Standard weight hinges x steel x 5 knuckle x 2 ball bearing x 114 mm x 101 mm - 626.
  - .2 One (1) Lock set x Office Function x lever x cyl x strike - 626.
  - .3 One (1) Floor mounted door stop - 626.
  - .4 One (1) Set sound gaskets x self adhesive x black.