

**PART 1**      **GENERAL**

**1.1**            **RELATED REQUIREMENTS**

- .1      Section 01 33 00 – Submittal Procedures.
- .2      Section 01 61 00 – Common Product Requirements.
- .3      Section 01 74 21 – Construction/Demolition Waste Management and Disposal.
- .4      Section 01 78 00 – Closeout Submittals.
- .5      Section 08 11 00 – Metal Doors and Frames.

**1.2**            **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 A156.4-2013, Door Controls - Closers.
  - .3      ANSI/BHMA A156.5-2010, Auxiliary Locks and Associated Products
  - .4      ANSI/BHMA A156.6-2010, Architectural Door Trim.
  - .5      ANSI/BHMA A156.8-2010, Door Controls - Overhead Stops and Holders.
  - .6      ANSI/BHMA A156.13-2012, Mortise Locks and Latches Series 1000.
  - .7      ANSI/BHMA A156.16-2013, Auxiliary Hardware.
  - .8      ANSI/BHMA A156.18-2012, Materials and Finishes.
  - .9      ANSI/BHMA A156.26-2012, Standard for Continuous Hinges.
- .2      Canadian Steel Door and Frame Manufacturers' Association (CSDMA)
  - .1      CSDMA Recommended Dimensional Standards for Commercial Steel Doors and Frames - 2009.

**1.3**            **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.

**1.4**            **CLOSEOUT SUBMITTALS**

- .1      Submit in accordance with Section 01 78 00 - Closeout Submittals.
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- .2 Operation and Maintenance Data: submit operation and maintenance data for door hardware for incorporation into manual.

## **1.5 MAINTENANCE MATERIALS SUBMITTALS**

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

## **1.6 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 Only products meeting ANSI/BHMA standards are acceptable. Items that are equal in design, function and quality will be accepted upon approval of the Departmental Representative.
- .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.

## **1.7 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.
- .4 Storage and Handling Requirements:
  - .1 Store materials off ground 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.

## **PART 2 PRODUCTS**

### **2.1 HARDWARE ITEMS**

- .1 Use one manufacturer's products only for similar items.
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**2.2 DOOR HARDWARE**

- .1 Locks and latches:
    - .1 Mortise locks and latches: to ANSI/BHMA A156.13, series 1000 mortise lock, grade 1, designed for function as stated in Hardware Schedule.
    - .2 Lever handles: plain design.
    - .3 Escutcheons: square.
    - .4 Normal strikes: box type, lip projection not beyond jamb.
    - .5 Cylinders: key into keying system as directed.
    - .6 Finished to ANSI/BHM.
  - .2 Butts and hinges:
    - .1 Continuous geared hinges: to ANSI/BHMA A156.26, heavy duty, 6063-T6 extruded tempered aluminum, three interlocking extrusions in pinless assembly installed in full height of door frame, complete with installation aids and fasteners to suit door and frame conditions.
  - .3 Door Closers and Accessories:
    - .1 Door controls (closers): to ANSI/BHMA A156.4, Grade 1 in accordance 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, Cush 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.
    - .11 Door co-ordinator: surface for pairs of doors with overlapping astragal.
  - .4 Auxiliary locks and associated products: to ANSI/BHMA A156.5, Grade 1, ANSI/BHMA 630 finish.
    - .1 Dead bolt, Type E06071 cylinder and thumb turn lock.
  - .5 Auxiliary hardware: to ANSI/BHMA A156.16, listed in Hardware Schedule:
    - .1 Lever extension flush bolt.
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- .6 Door bottom seal: heavy duty, door seal of extruded aluminum frame and hollow closed cell neoprene weather seal, surface mounted with drip cap, closed ends, clear anodized finish.
- .7 Thresholds: to ASI/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.
- .8 Weatherstripping:
  - .1 Head and jamb seal:
    - .1 Extruded aluminum frame and hollow closed cell neoprene insert, clear anodized finish.
- .9 Astragal: adjustable overlapping, extruded aluminum frame with vinyl insert.

### **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.
- .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.
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- .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.
- .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.
- .2 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

### **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.

### **3.6 SCHEDULE**

- .1 Doors 101:
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- .1 1 heavy duty continuous geared hinge x full height of frame x AL
- .2 1 mortise lockset x store room function x lever x cylinder x strike x 630
- .3 1 deadlock x cylinder x thumb turn inside x strike x 630
- .4 1 heavy duty door closer x hold-open arm x mounting plate x AL
- .5 1 set weather stripping x neoprene bulb x AL
- .6 1 door sweep x neoprene sweep x AL
- .7 1 200 mm deep threshold x width of door x AL c/w site applied door stop strip x neoprene bulk x AL
  
- .2 Door 02 (RHR Active Leaf):
  - .1 2 heavy duty continuous geared hinges x full height of frame x AL
  - .2 1 mortise lockset x store room function x lever x cylinder x strike x 6030 (active leaf).
  - .3 1 deadlock x cylinder x thumb turn inside x strike x 630
  - .4 1 set manual flush bolts x dustproof strike x 626.
  - .5 2 heavy duty door closers x hold-open arm x mounting plate x AL.
  - .6 1 door coordinator x head mount x filler piece x AL.
  - .7 1 set weather stripping x neoprene bulb x AL.
  - .8 2 door sweeps x neoprene sweep x AL.
  - .9 1 200 mm deep threshold x width of door x AL c/w site applied door stop strip x neoprene bulb x AL.
  - .10 1 "T" astragal x neoprene bulk x AL.