

Part 1 General

1.1 RELATED SECTIONS

- .1 Division 01-General Requirements
- .2 Section 08 11 00 – Metal Doors and Frames.
- .3 Division 26: Electrical wiring for electric releases and electric locks.

1.2 REFERENCES

- .1 Canadian Standards Association (CSA)
 - .1 CSA B651-2012, Accessible Design for the Built Environment
- .2 Canadian Steel Door and Frame Manufacturers' Association (CSDFMA).
 - .1 CSDMA Recommended Dimensional Standards for Commercial Steel Doors and Frames - 2009.
- .3 DHI: Door and Hardware Institute of Canada
- .4 NBC 2010, National Building Code of Canada
- .5 American National Standards Institute (ANSI) / Builders Hardware Manufacturers Association (BHMA)
 - .1 ANSI/BHMA A156.1-2006, American National Standard for Butts and Hinges.
 - .2 ANSI/BHMA A156.3-2008, Exit Devices.
 - .3 ANSI/BHMA A156.4-2008, Door Controls - Closers.
 - .4 ANSI/BHMA A156.6-2010, Architectural Door Trim
 - .5 ANSI/BHMA A156.13-2012, Mortise Locks and Latches Series 1000.
 - .6 ANSI/BHMA A156.18-2012, Materials and Finishes.
 - .7 ANSI/BHMA A156.19-2013, Power Assist and Low Energy Power - Operated Doors.
 - .8 BHMA A156.21-2009 Thresholds.
 - .9 BHMA A156.22-2012 Door Gasketing and Edge Seal Systems.
- .6 Underwriters' Laboratories Inc. (UL)
 - .1 UL 437, Key Locks.

1.3 SUBMITTALS

- .1 Product Data: Submit manufacturer's printed product literature, specifications and data sheet in accordance with Section 01 00 10 – General Instructions.
- .2 Hardware List:
 - .1 Submit contract hardware list in accordance with Section 01 00 10 – General Instructions.

- .2 Obtain the services of a qualified Architectural Hardware Consultant (AHC), certified by the Door and Hardware Institute to develop hardware schedule.
- .3 Coordinate hardware with Departmental Representative, the requirements of the Building Code, CSA B651, and Authorities having Jurisdiction.
- .4 Indicate specified hardware, including make, model, material, function, size, finish and other pertinent information.
- .5 Include with Hardware list a copy of manufacturer's technical product data, for each hardware item being supplied.
- .3 Manufacturer's Instructions: Submit manufacturer's installation instructions.
- .4 Closeout Submittals
 - .1 Provide operation and maintenance data for door closers, locksets, door holders' electrified hardware and fire exit hardware for incorporation into manual specified in Section 01 00 10 – General Instructions.

1.4 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 Ensure that door and hardware are tested as an assembly to maintain labelling requirements.
- .2 Test Reports: certified test reports showing compliance with specified performance characteristics and physical properties.
- .3 Standard of Acceptance: Products are to be compatible with and match existing hardware already in the building. Departmental Representative to confirm. Named manufacturer and model number when listed in this section are included for the sole purpose of describing hardware function and to further define the level of quality required for a specific hardware item. Products from other manufacturer are not excluded.
- .4 Certificates: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

1.5 DELIVERY, STORAGE, AND HANDLING

- .1 Packing, Shipping, Handling and Unloading:
 - .1 Deliver, store, handle and protect materials in accordance with Section 01 61 00 Common Product Requirements.
 - .2 Package each item of hardware including fastenings, separately or in like groups of hardware, label each package as to item definition and location.
 - .3 Storage and Protection: Store finishing hardware in locked, clean and dry area.

1.6 WASTE DISPOSAL AND MANAGEMENT

- .1 Separate and recycle waste materials in accordance with Section 01 00 10 – General Instructions.

- .2 Remove from site and dispose of packaging materials at appropriate recycling facilities.
- .3 Dispose of corrugated cardboard, polystyrene, and plastic packaging material in appropriate on-site bin for recycling in accordance with site waste management program.

1.7 MAINTENANCE

- .1 Extra Materials:
 - .1 Provide maintenance materials in accordance with Section 01 00 10 – General Instructions.
 - .2 Supply two sets of wrenches for door closers, locksets and fire exit hardware.

Part 2 Products

2.1 HARDWARE ITEMS

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

2.2 DOOR HARDWARE

- .1 Hardware schedule for specific hardware for each door, to be prepared by a qualified Architectural Hardware consultant AHC Certified, by the Door & Hardware Institute. Reference Drawings and hardware schedule for requirements.
- .2 Locksets and latchsets: mortised type for all doors to BHMA A156.13, series 1000, heavy duty grade 1, designed for function as stated in Hardware Schedule and having 19 mm latch bolt throw and 25 mm deadbolt throw and as follows:
 - .1 Trim Design: lever design, solid handle contoured C shape angle return.
 - .2 Provide rectangular escutcheons with concealed tamperproof fasteners on secure doors as identified by Departmental Representative. Round roses are suitable for most doors.
- .3 Cylinders (for locksets, exit devices and other locks): 6 pin mortised unit, high security pick proof and drill resistant in accordance with UL 437 standard, restricted and registered keyway, suitable for master keying and grand master keying all buildings of project into one system for entire site.
- .4 Butts and hinges: to BHMA A156.1, minimum 2 ball bearing type for all doors, 4 ball bearing type on heavy weight and high use doors, size and number of hinges per door to suit door type and as specified in the hardware schedule.
 - .1 Provide non removable pins on all out swinging doors.
 - .2 Electric Hinge: heavy duty high quality grade, long life, maintenance free hinge as proven in use, concealed switch or monitoring device purposely suited as required to function with electrical or electronically operated hardware item.
 - .1 Surface mounted or exposed power transfer armoured door loop devices are not acceptable.

- .5 Door Closers and door control devices: to BHMA A156.4, heavy duty grade 1, fully adjustable from size 1 to 5 to meet all barrier free conditions, complete with arms and brackets as required. Closer bodies to be cast iron and tested to minimum of 10 million cycles. Closer covers to be full molded high impact plastic, powder coated to finish specified.
- .6 Protective Plates: to BHMA A156.6. Provide kick plate, mop plate or armour plate as recommended by DHI best practices for application on doors of Vestibules, Corridors, Mechanical & Electrical rooms, washrooms and other doors subject to damage and as specified in the hardware schedule. All type 304 #4 brushed finish stainless steel and attached with suitable double sided tape.
- .7 Threshold to BHMA A156.21: extruded aluminum, barrier free design of maximum 12mm height and as specified in the hardware schedule.
- .8 Weather Strip to BHMA 156.22: extruded aluminum with silicone bulb seal. Aluminum frame to be solid type acceptable for installation of hardware on top of it. Door sweeps in aluminum frame and minimum 25mm brush seal.

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 Use fasteners compatible with material through which they pass.

2.4 KEYING

- .1 Doors to be keyed differently, master keyed and grand master keyed such that all openings of this project are tied into one keying system compatible with existing keying schedule. Prepare a detailed keying schedule in conjunction with the Departmental Representative prior to proceeding with keying. Provide all permanent cores and keys for submittal to Departmental Representative.
- .2 Provide 3 factory cut keys for every lock in this Contract. Provide 3 keys for every Master key groups and for the Grandmaster key.
- .3 Stamp keying code on keys and cylinders barrels. Do not stamp codes on cylinder face.
- .4 Construction keying: perimeter and interior doors of all buildings to be controlled by a temporary key system during construction.
 - .1 Supply 3 copies of construction keys to Departmental Representative for his use.
 - .2 Restrict distribution and control of other copies of construction key to limited personnel as approved by Departmental Representative.
- .5 Turn over all final cut keys, complete with keying schedule as one package, directly to Departmental Representative.

Supply dual tag key control system complete with lockable key box, control tags and register. Size system to be expanded by 50% in future, where specified in the hardware schedule.

Part 3 Execution

3.1 MANUFACTURER'S INSTRUCTIONS

- .1 Compliance: comply with manufacturer's written data, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.
- .2 Furnish metal door and frame manufacturers with complete instructions and templates for preparation of their work to receive hardware.
- .3 Furnish manufacturers' instructions for proper installation of each hardware component.

3.2 INSTALLATION

- .1 Install hardware to standard hardware location dimensions in accordance with Canadian Metric Guide for Steel Doors and Frames (Modular Construction) prepared by Canadian Steel Door and Frame Manufacturers' Association.
- .2 Where door stop contacts door pulls, mount stop to strike bottom of pull.
- .3 Install key control cabinet.
- .4 Use only manufacturer's supplied fasteners. Failure to comply may void manufacturer's warranties and applicable licensed labels. Use of "quick" type fasteners, unless specifically supplied by manufacturer, is unacceptable.
- .5 Remove construction cores when directed by Departmental Representative; install permanent cores and check operation of locks.

3.3 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 provide tight fit at contact points with frames.

3.4 CLEANING

- .1 Perform cleaning after installation to remove construction and accumulated environmental dirt.
- .2 Clean hardware with damp rag and approved non-abrasive cleaner, and polish hardware in accordance with manufacture's instructions.
- .3 Remove protective material from hardware items where present.

- .4 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

3.5 DEMONSTRATION

- .1 Keying System Setup and Cabinet:
 - .1 Set up key control system with file key tags, duplicate key tags, numerical index, alphabetical index and key change index, label shields, control book and key receipt cards.
 - .2 Place file keys and duplicate keys in key cabinet on their respective hooks.
 - .3 Lock key cabinet and turn over key to General Contractor for submittal to Departmental Representative.
- .2 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, locksets and fire exit hardware.
- .3 Demonstrate operation, operating components, adjustment features, and lubrication requirements.

END OF SECTION