
PART 1 - GENERAL1.1 RELATED
REQUIREMENTS

- .1 Section 08 14 16 - Flush Wood Doors.
- .2 Section 08 71 00 - Door Hardware.

1.2 REFERENCES

- .1 American Society for Testing and Materials International (ASTM)
 - .1 ASTM A 653/A 653M-06a, Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
 - .2 ASTM B 29-03, Standard Specification for Refined Lead.
 - .3 ASTM B 749-03, Standard Specification for Lead and Lead Alloy Strip, Sheet and Plate Products.
- .2 Canada Green Building Council (CaGBC)
 - .1 LEED Canada-NC Version 1.0-2004, LEED (Leadership in Energy and Environmental Design): Green Building Rating System Reference Package For New Construction and Major Renovations (including Addendum 2007).
 - .2 LEED Canada-CI Version 1.0-2007, LEED (Leadership in Energy and Environmental Design): Green Building Rating System Reference Guide For Commercial Interiors.
- .3 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-1.181-99, Ready-Mixed Organic Zinc-Rich Coating.
 - .2 CGSB 41-GP-19Ma-84, Rigid Vinyl Extrusions for Windows and Doors.
- .4 Canadian Standards Association (CSA International)
 - .1 CSA-G40.20-04/G40.21-04, General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.
 - .2 CSA W59-03, Welded Steel Construction (Metal Arc Welding).
- .5 Canadian Steel Door Manufacturers' Association (CSDMA)
 - .1 CSDMA, Recommended Specifications for Commercial Steel Doors and Frames, 2000.
 - .2 CSDMA, Selection and Usage Guide for Commercial Steel Doors, 1990.
- .6 National Fire Protection Association (NFPA)
 - .1 NFPA 80-13, Standard for Fire Doors and Other Opening Protective's.
 - .2 NFPA 252-12, Fire Tests of Door Assemblies.

- .7 South Coast Air Quality Management District (SCAQMD), California State
 - .1 SCAQMD Rule 1113-04, Architectural Coatings.
 - .2 SCAQMD Rule 1168-05, Adhesives and Sealants Applications.
- .8 Underwriters' Laboratories of Canada (ULC)
 - .1 CAN/ULC-S701-01, Standard for Thermal Insulation, Polystyrene, Boards and Pipe Covering.
 - .2 CAN/ULC-S702-97, Standard for Thermal Insulation, Mineral Fibre, for Buildings.
 - .3 CAN/ULC-S704-03, Standard for Thermal Insulation, Polyurethane and Polyisocyanurate Boards, Faced.
 - .4 CAN4-S104-M80, Standard Method for Fire Tests of Door Assemblies.
 - .5 CAN4-S105-M85, Standard Specification for Fire Door Frames Meeting the Performance Required by CAN4-S104.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Provide product data: in accordance with Section 01 33 00 - Submittal Procedures.
- .3 Provide shop drawings: in accordance with Section 01 33 00 - Submittal Procedures.
 - .1 Indicate each type of door, material, steel core thicknesses, mortises, reinforcements, location of exposed fasteners, openings, glazed, arrangement of hardware and fire rating and finishes.
 - .2 Indicate each type frame material, core thickness, reinforcements, glazing stops, location of anchors and exposed fastenings and fire rating finishes.
 - .3 Include schedule identifying each unit, with door marks and numbers relating to numbering on drawings and door schedule.
 - .4 Submit test and engineering data, and installation instructions.
- .4 Provide samples in accordance with Section 01 33 00 - Submittal Procedures.

1.4 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements.
- .2 Waste Management and Disposal:
 - .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Hot dipped galvanized steel sheet: to ASTM A 653M, ZF75, minimum base steel thickness in accordance with CSDMA Table 1 - Thickness for Component Parts.
- .2 Reinforcement plate: to CSA G40.20/G40.21, Type 44W, coating designation to ASTM A 653M, ZF75. Reinforcement frame size: 6.4 mm x 25 mm x 925 mm steel plate centred on door strike.
- .3 Composites: balance of core materials used in conjunction with lead: in accordance with manufacturers' proprietary design.

2.2 DOOR CORE MATERIALS

- .1 Hollow steel, vertically stiffened with 0.91 mm galvanized steel interlocking "z" or "top hat" shaped stiffeners welded at 150mm o.c. Weld front skin stiffeners offset to allow for 3mm clearance of bottom stiffeners. Weld shape stiffeners to back skin and mechanically interlock with top stiffeners. Form bottom stiffener in door core a minimum of 75 mm. Fill all voids with fibrous batt insulation.

2.3 ADHESIVES

- .1 Honeycomb cores and steel components: heat resistant, spray grade, resin reinforced neoprene/rubber (polychloroprene) based, low viscosity, contact cement.
 - .1 Adhesive: maximum VOC content 50 g/L to SCAQMD Rule 1168.
- .2 Polystyrene and polyurethane cores: heat resistant, epoxy resin based, low viscosity, contact cement.
- .3 Lock-seam doors: fire resistant, resin reinforced polychloroprene, high viscosity, sealant/adhesive.

2.4 PRIMER

- .1 Touch-up prime CAN/CGSB-1.181.
 - .1 Maximum VOC limit 50 g/L to GC-03.

2.5 PAINT

- .1 Field paint steel doors and frames in accordance with Sections 09 91 23 - Interior Painting. Protect weatherstrips from paint. Provide final finish free of scratches or other blemishes.
 - .1 Maximum VOC emission level 50 g/L to GS-11 to SCAQMD Rule 1113.

2.6 ACCESSORIES

- .1 Door silencers: single stud rubber/neoprene type.
- .2 Exterior and interior top and bottom caps: rigid polyvinylchloride extrusion conforming to CGSB 41-GP-19Ma steel.

2.7 FRAMES

FABRICATION GENERAL

- .3 Fabricate glazing stops as formed channel, minimum 16 mm height, accurately fitted, butted at corners and fastened to frame sections with counter-sunk oval head sheet metal screws.
- .4 Metallic paste filler: to manufacturer's standard.
- .5 Fire labels: metal riveted.
- .1 Fabricate frames in accordance with CSDMA specifications.
- .2 Fabricate frames to profiles and maximum face sizes as indicated.
- .3 Interior frames: 1.6 mm welded type construction. Fire rating as indicated.
- .4 Blank, reinforce, drill and tap frames for mortised, templated hardware, and electronic hardware using templates provided by finish hardware supplier. Reinforce frames for surface mounted hardware.
- .5 Protect mortised cutouts with steel guard boxes.
- .6 Prepare frame for door silencers, 3 for single door, 2 at head for double door.
- .7 Manufacturer's nameplates on frames and screens are not permitted.
- .8 Conceal fastenings except where exposed fastenings are indicated.
- .9 Provide factory-applied touch up primer at areas where zinc coating has been removed during fabrication.

2.8 FRAME ANCHORAGE

- .1 Provide appropriate anchorage to floor and wall construction.
- .2 Locate each wall anchor immediately above or below each hinge reinforcement on hinge jamb and directly opposite on strike jamb.
- .3 Provide 2 anchors for rebate opening heights up to 1520 mm and 1 additional anchor for each additional 760 mm of height or fraction thereof.
- .4 Locate anchors for frames in existing openings not more than 150 mm from top and bottom of each jambs and intermediate at 660 mm on centre maximum.

2.9 FRAMES: WELDED TYPE

- .1 Welding in accordance with CSA W59.
- .2 Accurately mitre or mechanically joint frame product

and securely weld on inside of profile.

- .3 Cope accurately and securely weld butt joints of mullions, transom bars, centre rails and sills.
- .4 Grind welded joints and corners to a flat plane, fill with metallic paste and sand to uniform smooth finish.
- .5 Securely attach floor anchors to inside of each jamb profile.
- .6 Weld in 2 temporary jamb spreaders per frame to maintain proper alignment during shipment.

2.10 DOOR FABRICATION GENERAL

- .1 Doors: swing type, flush, with provision for glass and/or louvre openings as indicated.
- .2 Interior doors: hollow steel construction.
- .3 Fabricate doors with longitudinal edges welded. Seams: grind welded joints to a flat plane, fill with metallic paste filler and sand to a uniform smooth finish.
- .4 Blank, reinforce, drill doors and tap for mortised, templated hardware.
- .5 Factory prepare holes 12.7 mm diameter and larger except mounting and through-bolt holes, on site, at time of hardware installation.
- .6 Reinforce doors where required, for surface mounted hardware. Provide inverted, recessed, spot welded channels to top and bottom of interior doors.
- .7 Provide factory-applied touch-up primer at areas where zinc coating has been removed during fabrication.
- .8 Provide fire labelled doors for those openings requiring fire protection ratings, as scheduled. Test such products in conformance with CAN4-S104, ASTM E 152 and NFPA 252 and list by nationally recognized agency having factory inspection service and construct as detailed in Follow-Up Service Procedures/Factory Inspection Manuals issued by listing agency to individual manufacturers.
- .9 Manufacturer's nameplates on doors are not permitted.

2.11 HOLLOW STEEL CONSTRUCTION

- .1 Form face sheets for interior doors from 1.6 cold rolled sheet steel.
- .2 Reinforce doors with vertical stiffeners, securely welded to face sheets at 150 mm on centre maximum.

- .3 Fill voids between stiffeners of interior doors with fibreglass core.

PART 3 - EXECUTION

3.1 MANUFACTURER'S INSTRUCTIONS

- .1 Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheets.

3.2 INSTALLATION GENERAL

- .1 Install labelled steel fire rated doors and frames to NFPA 80 except where specified otherwise.
- .2 Install doors and frames to CSDMA Installation Guide.

3.3 FRAME INSTALLATION

- .1 Set frames plumb, square, level and at correct elevation.
- .2 Secure anchorages and connections to adjacent construction.
- .3 Brace frames rigidly in position while building-in. Install temporary horizontal wood spreader at third points of door opening to maintain frame width. Provide vertical support at centre of head for openings over 1200 mm wide. Remove temporary spreaders after frames are built-in.
- .4 Make allowances for deflection of structure to ensure structural loads are not transmitted to frames.
- .5 Caulk perimeter of frames between frame and adjacent material.

3.4 DOOR INSTALLATION

- .1 Install doors and hardware in accordance with hardware templates and manufacturer's instructions and Section 08 71 00 - Door Hardware.
- .2 Provide even margins between doors and jambs and doors and finished floor and thresholds as follows.
 - .1 Hinge side: 1.0 mm.
 - .2 Latch side and head: 1.5 mm.
 - .3 Finished floor: 13 mm.
- .3 Adjust operable parts for correct function.

3.5 FINISH REPAIRS

- .1 Touch up with primer finishes damaged during installation.
- .2 Fill exposed frame anchors and surfaces with imperfections with metallic paste filler and sand to a uniform smooth finish.

PART 1 - GENERAL1.1 RELATED
REQUIREMENTS

- .1 Section 08 11 00 - Metal Doors and Frames.
- .2 Section 08 71 00 - Door Hardware.

1.2 REFERENCES

- .1 Architectural Woodwork Manufacturers Association of Canada (AWMAC).
 - .1 Quality Standards for Architectural Woodwork 1998.
- .2 Canadian General Standards Board (CGSB).
 - .1 CAN/CGSB-71.19-M88, Adhesive, Contact, Sprayable.
 - .2 CAN/CGSB-71.20-M88, Adhesive, Contact, Brushable.
- .3 Canadian Standards Association (CSA International).
 - .1 CSA A440.2-98, Energy Performance of Windows and Other Fenestration Systems.
 - .2 CSA O115-M1982(R2001), Hardwood and Decorative Plywood.
 - .3 CAN/CSA O132.2 Series-90(R1998), Wood Flush Doors.
 - .4 CAN/CSA-O132.5-M1992(R1998), Stile and Rail Wood Doors.
 - .5 CAN/CSA-Z808-96, A Sustainable Forest Management System: Guidance Document.
 - .6 CSA Certification Program for Windows and Doors 00.
- .4 Environmental Choice Program (ECP).
 - .1 CCD-045-92, Sealants and Caulking Compounds.
 - .2 CCD-046-92, Adhesives.
- .5 National Fire Protection Association (NFPA).
 - .1 NFPA 80-1999, Standard for Fire Doors and Fire Windows.
 - .2 NFPA 252-1999, Standard Method of Fire Tests of Door Assemblies.
- .6 Underwriters' Laboratories of Canada (ULC).
 - .1 CAN-4S104M-80(R1985), Fire Tests of Door Assemblies.
 - .2 CAN4-S105M-85 (R1992), Fire Door Frames Meeting the Performance Required by CAN4-S104.

1.3 ACTION AND
INFORMATIONAL
SUBMITTALS

- .1 Product Data:
 - .1 Submit manufacturer's printed product literature, specifications and data sheet in accordance with Section 01 33 00 - Submittal Procedures.
 - .2 Submit two copies of WHMIS MSDS - Material Safety Data Sheets in accordance with Section 01 33 00 -

Submittal Procedures. Indicate VOC's:

- .1 For caulking materials during application and curing.
- .2 For door materials and adhesives.

.2 Shop Drawings:

- .1 Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Indicate door types and cutouts for lights and louvres, sizes, core construction, transom panel construction and cutouts.

1.4 SAMPLES

- .1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit one 300 x 300 mm corner sample of each type wood door.
- .3 Show door construction, core, glazing detail and faces.
- .4 Manufacturer's Instructions:
 - .1 Submit manufacturer's installation instructions.

1.5 DELIVERY, STORAGE, AND HANDLING

- .1 Storage and Protection:
 - .1 Protect doors from dampness. Arrange for delivery after work causing abnormal humidity has been completed.
 - .2 Store doors in well ventilated room, off floor, in accordance with manufacturer's recommendations.
 - .3 Protect doors from scratches, handling marks and other damage.
 - .4 Store doors away from direct sunlight.

1.6 WASTE MANAGEMENT AND DISPOSAL

- .1 Remove from site and dispose of packaging materials at appropriate recycling facilities.
- .2 Dispose of corrugated cardboard, polystyrene, plastic packaging material in appropriate on-site bin for recycling in accordance with site waste management program.
- .3 Unused or damaged glazing materials are not recyclable and must not be diverted to municipal recycling programs.
- .4 Divert unused adhesive material from landfill to official hazardous material collections site approved by Departmental Representative.
- .5 Do not dispose of unused paint materials into sewer systems, into lakes, streams, onto ground or in locations where it will pose health or environmental hazard.

PART 2 - PRODUCTS

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| <u>2.1 WOOD FLUSH DOORS</u> | <ul style="list-style-type: none">.1 Solid core: to CAN/CSA-O132.2.1.<ul style="list-style-type: none">.1 Construction:<ul style="list-style-type: none">.1 Solid particleboard core: stile and rail frame bonded to particleboard core with wood lock blocks, 3-ply construction..2 Solid wood core:<ul style="list-style-type: none">.1 Glued block core with wood edge band..2 Face Panels:<ul style="list-style-type: none">.1 Hardboard: composition face moulded face..3 Adhesive: Type II (water resistant) for interior doors. |
| <u>2.2 FABRICATION</u> | <ul style="list-style-type: none">.1 Vertical edge strips to match face veneer. |

PART 3 - EXECUTION

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| <u>3.1 MANUFACTURER'S INSTRUCTIONS</u> | <ul style="list-style-type: none">.1 Compliance: comply with manufacturer's written data, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets. |
| <u>3.2 INSTALLATION</u> | <ul style="list-style-type: none">.1 Unwrap and protect doors in accordance with CAN/CSA-O132.2 Series, Appendix A..2 Install labelled fire rated doors to NFPA 80..3 Install doors and hardware in accordance with manufacturer's printed instructions and CAN/CSA-O132.2 Series, Appendix A..4 Adjust hardware for correct function. |
| <u>3.3 ADJUSTMENT</u> | <ul style="list-style-type: none">.1 Re-adjust doors and hardware just prior to completion of building to function freely and properly. |
| <u>3.4 CLEANING</u> | <ul style="list-style-type: none">.1 Perform cleaning as soon as possible after installation to remove construction and accumulated environmental dirt..2 Remove traces of primer, caulking; clean doors and frames..3 On completion of installation, remove surplus materials, rubbish, tools and equipment barriers. |

PART 1 - GENERAL1.1 RELATED
REQUIREMENTS

- .1 Section 08 11 00 - Metal Doors and Frames.
- .2 Section 08 14 16 - Flush Wood Doors.

1.2 REFERENCES

- .1 American National Standards Institute (ANSI) / Builders Hardware Manufacturers Association (BHMA)
 - .1 ANSI/BHMA A156.1-2000, American National Standard for Butts and Hinges.
 - .2 ANSI/BHMA A156.2-2003, Bored and Preassembled Locks and Latches.
 - .3 ANSI/BHMA A156.3-2001, Exit Devices.
 - .4 ANSI/BHMA A156.4-2000, Door Controls - Closers.
 - .5 ANSI/BHMA A156.5-2001, Auxiliary Locks and Associated Products.
 - .6 ANSI/BHMA A156.6-2005, Architectural Door Trim.
 - .7 ANSI/BHMA A156.8-2005, Door Controls - Overhead Stops and Holders.
 - .8 ANSI/BHMA A156.10-1999, Power Operated Pedestrian Doors.
 - .9 ANSI/BHMA A156.12-2005, Interconnected Locks and Latches.
 - .10 ANSI/BHMA A156.13-2002, Mortise Locks and Latches Series 1000.
 - .11 ANSI/BHMA A156.14-2002, Sliding and Folding Door Hardware.
 - .12 ANSI/BHMA A156.15-2006, Release Devices - Closer Holder, Electromagnetic and Electromechanical.
 - .13 ANSI/BHMA A156.16-2002, Auxiliary Hardware.
 - .14 ANSI/BHMA A156.17-2004, Self-closing Hinges and Pivots.
 - .15 ANSI/BHMA A156.18-2006, Materials and Finishes.
 - .16 ANSI/BHMA A156.19-2002, Power Assist and Low Energy Power - Operated Doors.
 - .17 ANSI/BHMA A156.20-2006, Strap and Tee Hinges and Hasps.
- .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.

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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 Test Reports: certified test reports showing compliance with specified performance characteristics and physical properties.
 - .5 Manufacturer's Instructions: submit manufacturer's installation instructions.
- 1.4 CLOSEOUT
SUBMITTALS
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- .1 Submit in accordance with Section 01 78 00 Closeout Submittals.
 - .2 Operation and Maintenance Data: submit operation and maintenance data for door hardware for incorporation into manual.
- 1.5 QUALITY
ASSURANCE
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- .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.
- 1.6 DELIVERY,
STORAGE AND
HANDLING
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- .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, 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 wrapping or strippable coating.
 - .4 Replace defective or damaged materials with new.

PART 2 - PRODUCTS

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| <u>2.1 HARDWARE ITEMS</u> | .1 | Use one manufacturer's products only for similar items. |
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| <u>2.2 DOOR HARDWARE</u> | .1 | Locks and latches: <ul style="list-style-type: none">.1 Bored and preassembled locks and latches: to ANSI/BHMA A156.2, series 2000 preassembled lock, grade 1, designed for function and keyed as stated in Hardware Schedule..2 Interconnected locks and latches: to ANSI/BHMA A156.12, series 5000 interconnected lock, grade 1, designed for function and keyed as stated in Hardware Schedule..3 Mortise locks and latches: to ANSI/BHMA A156.13, series 1000 mortise lock, grade 1, designed for function and keyed as stated in Hardware Schedule..4 Lever handles: plain design..5 Roses: round..6 Normal strikes: box type, lip projection not beyond jamb..7 Cylinders: key into keying system as noted..8 Finished to 626. |
| | .2 | Butts and hinges: <ul style="list-style-type: none">.1 Butts and hinges: to ANSI/BHMA A156.1, designated by letter A and numeral identifiers, followed by size and finish, listed in Hardware Schedule. |
| | .3 | Exit devices: to ANSI/BHMA A156.3, type, function, grade 1 2, conventional modern modern-narrow stile special (describe) design, finished to. <ul style="list-style-type: none">.1 Auxiliary items: door co-ordinator, type 21, for pairs of doors with overlapping astragals. |
| | .4 | Door Closers and Accessories: <ul style="list-style-type: none">.1 Door controls (closers): to ANSI/BHMA A156.4, designated by letter C and numeral identifiers listed in Hardware Schedule, in accordance with ANSI/BHMA A156.4, table A1, finished to 626..2 Door controls - magnetic overhead holders: to ANSI/BHMA A156.8, designated by letter C and numeral identifiers listed in Hardware Schedule, finished to 626..3 Closer/holder release devices: to ANSI/BHMA A156.15, designated by letter C and numeral identifiers listed in hardware schedule, finished to 626. |
| | .5 | Auxiliary locks and associated products: to ANSI/BHMA A156.5, designated by letter E and numeral identifiers as listed below, finished to 626. <ul style="list-style-type: none">.1 Abloy Model 1297 complete with CY415 hardened steel rim cylinder. |

- .6 Auxiliary hardware: to ANSI/BHMA A156.16, listed in Hardware Schedule and as listed below, finished to 626.
 - .1 Mechanical access control heavy duty cylindrical lockset (mechanical push button combination lockset), lever trim, with key override, [finished to 626].
 - .2 Door silencer: type: clear.
- .7 Door bottom seal: heavy duty, door seal of extruded aluminum frame and solid closed cell neoprene weather seal, surface mounted, closed ends, adjustable automatic retract mechanism when door is open, clear anodized finish.
- .8 Thresholds: width of door frame x full width of door opening, extruded aluminum mill finish, serrated surface, with lip and vinyl door seal insert.
- .9 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.
- .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 Keying by others.

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 Where door stop contacts door pulls, mount stop to strike bottom of pull.
- .6 Install key control cabinet.
- .7 Use only manufacturer's supplied fasteners.
 - .1 Use of "quick" type fasteners, unless specifically supplied by manufacturer, is unacceptable.
- .8 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:
 - .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.
- .2 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
 - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

3.4 DEMONSTRATION

- .1 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 Hardware Set H1:
 - .1 1 Unican level lockset (active leaf only) - reused.
 - .2 1 ½ pairs hinges - reused.
 - .3 1 ea. Top and bottom flush bolts (fixed leaf only) - reused.
 - .4 1 door closer (active leaf only) - reused.
 - .5 1 aluminum threshold - reused.
 - .6 1 automatic drop bottom, surface mounted - reused.
 - .7 1 floor mounted door stop - new.
 - .8 1 full height steel astragal - reused.
 - .9 Signage plate - (active leaf only) - reused.
 - .10 Acoustic gasket - new.
- .2 Hardware Set H2:
 - .1 1 Unican level lockset (active leaf only) - reused.
 - .2 1 ½ pairs hinges - reused.
 - .3 1 door closer (active leaf only) - reused.
 - .4 1 aluminum threshold - new.
 - .5 1 automatic drop bottom, surface mounted - new.
 - .6 1 wall mounted door stop - new.
 - .7 1 metal kick-plate (corridor side) - reused.
 - .8 Signage plate - (corridor side) - reused.
 - .9 Acoustic gasket - new.
- .3 Hardware Set H3:
 - .1 1 mortise lock and latch set - Schlage L9486, ANSI F15 function without indicator.
 - .2 1 rim lock - Abloy Model 1297 complete with CY415 hardened steel rim cylinder.
 - .3 2 pairs hinges.
 - .4 1 interlocking threshold.
 - .5 1 door contact (by others).
 - .6 1 magnetic hold open device.
 - .7 1 heavy duty pneumatic door closer.
 - .8 1 door sweep.
- .4 Hardware Set H4:
 - .1 1 mortise lever lockset.
 - .2 1 ½ pairs hinges.
 - .3 2 floor mounted door stop.
 - .4 1 acoustical gasket.