

1 GENERAL

1.01 REFERENCE STANDARDS

- .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 A 1008 / A 1008M-03, Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability
 - .3 ASTM B 29-03, Standard Specification for Refined Lead.
 - .4 ASTM B 749-03, Standard Specification for Lead and Lead Alloy Strip, Sheet and Plate Products.
- .2 CSA Group (CSA)
 - .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).
- .3 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.
- .4 National Fire Protection Association (NFPA)
 - .1 NFPA 80-99, Standard for Fire Doors and Fire Windows.
 - .2 NFPA 252-03, Standard Methods of Fire Tests of Door Assemblies.
- .5 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.

1.02 SYSTEM DESCRIPTION

- .1 Design Requirements:
 - .1 Design exterior frame assembly to accommodate to expansion and contraction when subjected to minimum and maximum surface temperature of -35 degrees C to 35 degrees C.
 - .2 Maximum deflection for exterior steel entrance screens under wind load of 1.2 kPa not to exceed 1/175th of span.
 - .3 Steel fire rated doors and frames: labelled and listed by an organization accredited by Standards Council of Canada in conformance with CAN4-

- S104 NFPA 252 for ratings specified or indicated.
- .4 Provide fire labelled frames for openings requiring fire protection ratings. Test products in conformance with CAN4-S104, ASTM E 152 or NFPA 252 and listed by nationally recognized agency having factory inspection services.
- .5 Provide Detention security metal doors and frames with specified fire rating and/or bullet resistance rating as indicated and as specified herein

1.03 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 Submit drawings stamped and signed by professional engineer registered or licensed in Province of Saskatchewan, Canada.
 - .2 Indicate each type of door, material, steel core thicknesses, mortises, reinforcements, location of exposed fasteners, openings, glazed louvred, arrangement of hardware and fire rating and finishes.
 - .3 Indicate each type frame material, core thickness, reinforcements, glazing stops, location of anchors and exposed fastenings and reinforcing fire rating finishes.
 - .4 Include schedule identifying each unit, with door marks and numbers relating to numbering on drawings and door schedule.

1.04 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 19 - Waste Management and Disposal.

2 PRODUCTS

2.01 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 Commercial quality, level, cold-rolled steel conforming to ASTM A 1008 / A1008M CS type B.
- .3 Reinforcement channel: to CSA G40.20/G40.21, Type 44W, coating designation to ASTM A 653M, ZF75.

2.02 DOOR CORE MATERIALS

- .1 Honeycomb construction:
 - .1 Structural small cell, 24.5 mm maximum kraft paper 'honeycomb', weight: 36.3 kg per ream minimum, density: 16.5 kg/m³ minimum sanded to required thickness.
- .2 Stiffened: face sheets, honeycomb uninsulated core.
- .3 Temperature rise rated (TRR): core composition to limit temperature rise on unexposed side of door to 250 degrees C at 30 60 minutes. Core to be tested as part of a complete door assembly, in accordance with CAN4-S104, ASTM E 152 or NFPA 252, covering Standard Method of Tests of Door Assemblies and listed by nationally recognized testing agency having factory inspection service.

2.03 ADHESIVES

- .1 Honeycomb cores and steel components: heat resistant, spray grade, resin reinforced neoprene/rubber (polychloroprene) based, low viscosity, contact cement.
- .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.

2.04 ACCESSORIES

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

2.05 FRAMES FABRICATION GENERAL

- .1 Fabricate frames in accordance with CSDMA specifications.
- .2 Fabricate frames to profiles and maximum face sizes as indicated.
- .3 Interior frames: 1.2 mm welded type construction.

- .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.

2.06 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.

2.07 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.
- .7 Fabricate frame products for openings in sections, x mm, splice joints for field assembly.
- .8 Securely attach lead to inside of frame profile from return to jamb soffit (inclusive) on door side of frame only.

2.08 DOOR FABRICATION GENERAL

- .1 Doors: swing type, flush, with provision for glass and/or louvre openings as indicated.
- .2 Fabricate doors with longitudinal edges locked seam locked seamed, adhesive assisted welded. Seams: visible grind welded joints to a flat plane, fill with metallic paste filler and sand to a uniform smooth finish.
- .3 Doors: manufacturers' proprietary construction, tested and/or engineered as part of a fully operable assembly, including door, frame, gasketing and hardware in accordance with ASTM E 330 to provide blast resistance of .
- .4 Blank, reinforce, drill doors and tap for mortised, templated hardware and electronic 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 flush PVC steel top caps to exterior doors. 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 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.

2.09 DOORS: HONEYCOMB CORE CONSTRUCTION

- .1 Form face sheets for exterior doors from 1.6 1.2 1.0 mm sheet steel with honeycomb polystyrene polyurethane core laminated under pressure to face sheets.
- .2 Form face sheets for interior doors from 1.6 1.2 1.0 mm sheet steel with honeycomb temperature rise rated core laminated under pressure to face sheets.

2.10 THERMALLY BROKEN DOORS AND FRAMES

- .1 Fabricate thermally broken doors by using insulated core and separating exterior parts from interior parts with continuous interlocking thermal break.
- .2 Thermal break: rigid polyvinylchloride extrusion conforming to CGSB 41-GP-19Ma.
- .3 Fabricate thermally broken frames separating exterior parts from interior parts with continuous interlocking thermal break.
- .4 Apply insulation.

2.11 DETENTION GRADE DOORS AND FRAMES

- .1 Doors and frames shall be manufactured of commercial quality, level, cold-rolled steel conforming to ASTM A 1008 / A1008M CS type B.
- .2 Detention security doors and frames steel shall be for Grades 3 and 4, 0.067 in. (1.7 mm), for Grades 1 and 2, 0.093 in. (2.3 mm)] minimum thickness.

3 EXECUTION**3.01 MANUFACTURER'S INSTRUCTIONS**

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

3.02 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.

3.03 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.

- .6 Maintain continuity of air barrier and vapour retarder.

3.04 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 Latchside and head: 1.5 mm.
 - .3 Finished floor, top of carpet noncombustible sill and thresholds: 13 mm.
- .3 Adjust operable parts for correct function.
- .4 Install louvres.

3.05 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.

END OF SECTION

1. General**1.01 DESCRIPTION OF WORK**

- .1 Work consists of furnishing "Detention" grade hollow metal doors, pressed steel frames, screens, and windows noted on the door schedule and as specified herein.

1.02 REFERENCES

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| .1 | ASTM A366M | Specification for Steel Sheet, Carbon, Cold-Rolled, Commercial Quality |
| .2 | ASTM A370 | Test Methods and Definition for Mechanical Testing of Steel Products |
| .3 | ASTM A653M | Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvanized) by the Hot-Dip Process |
| .4 | ASTM A569 | Specification for Steel, Carbon (0.15 Maximum Percent), Hot Rolled Sheet and Strip, Commercial Quality |
| .5 | ASTM A653 | Specifications for Steel Sheet, Zinc-Coated (Galvanized) by Hot-Dipped Process, Commercial Quality |
| .6 | ASTM E 152 | Method of Fire Tests of Door Assemblies |
| .7 | ASTM F 1233 | Standard Test Method for Security Glazing Materials and Systems |
| .8 | ASTM F-1450 | Standard Test Methods for Hollow Metal Swing Door Assemblies for Detention Centre |
| .9 | CAN/CSA-G40,20-M | General Requirements for Rolled or Welded Structural Quality Steel |
| .10 | CAN/CSA-G40.21-M | Structural Quality Steels |
| .11 | CSA W59-M | Welded Steel Construction (Metal Arc Welding) |
| .12 | CAN4-S104-M | Standard Method for Fire Tests of Door Assemblies |
| .13 | NFPA 80 | Fire Doors and Windows |
| .14 | NFPA 252 | Standard Methods of Fire Tests of Door Assemblies |

1.03 SUBMITTALS

- .1 Product Data: Submit manufacturer's material and fabrication specification and installation instructions modified to reflect project requirements and job conditions. Include instructions for handling, storage, and protection of each product. Provide specific instructions for installation in precast and cast-in-place concrete, including bracing of frames and frame tolerances that must be maintained.
- .2 Shop Drawings: Submit shop drawings before fabrication showing erection, construction, and requirements not fully described by manufacturer's data. Include plan (horizontal) section through all frames and elevations drawn to scale, not less than or 1:40. Include details not less than or 1:10. Indicate required anchorage and accessory items, field dimensions, and finishes. Shop drawings shall include a transverse and longitudinal section through the door showing reinforcing, etc. Provide a schedule listing the location in the building of each door and frame using indicated reference numbers for details and openings shown in the contract documents. The shop drawings shall also contain "labeling" and "equivalent construction" data and show proposed locations for Grout and Anchor Access Holes.
- .3 Tests: Submit certified engineering reports by independent testing laboratories performed within the last two years. Reports shall certify that the results of these tests meet or exceed minimum performance requirements described. All door and frame tests shall be video taped and these tapes shall be available to MBS Designee. Tested doors, frames, and other material shall be retained at the manufacturer's facility for possible future inspection. The test reports shall contain specifications and details of the construction of the tested assemblies.
 - .1 Door Static Load Test: NAAMM 863-04
 - .2 Door Rack Test: NAAMM 863-04
 - .3 Removable Glazing Stop Test: NAAMM 863-04 (paragraphs 1.06, D and F). The removable glazing stop test report shall include specification and samples of security screws. The manufacturer shall submit a letter certifying that screws used on this project match the screws tested.
 - .4 Door Assembly Impact Test: ASTM F 1450 (05) or NAAMM 863-04 Test Methods for Hollow Metal Swinging Door Assemblies for Detention Facilities. The manufacturer shall submit a letter certifying that door assemblies used on this project match the assemblies tested in all respects.
- .4 Mill Certification: Submit mill certification on all materials used to fabricate items specified.

- .5 Quality Control Certification: During construction, for each SHM door, maintain Frame Tolerance Verification Form available for review at the job site. At any SHM door prior to hardware installation, submit certified copy with Contractor and Security Hardware Installer signatures.

1.04 QUALITY ASSURANCE

- .1 Security Hollow Metal (SHM) Standard: Comply with ANSI/NAAMM HMMA 863-04 "Guide Specifications for Detention Security Hollow Metal Doors and Frames," except as otherwise indicated.
- .2 Provide security hollow metal work manufactured by a single firm specializing in the production of this type of work. Provide doors and frames from the same manufacturer.
- .3 Welders shall be currently qualified under AWS B2.1 or certified under CSA W47.1-92 Classification 2.1 to perform the type of work required.
- .4 All welding requires complete penetration and fusion. Welds must remove parent metal when tested to failure. Refer to welding standards as define in AWS D1.1 and D1.3, CSA W47.1-92 and RWMA, Resistance Welding Manual.
- .5 Fire-Rated Door Assemblies: Where fire-rated door assemblies are indicated or required, provide fire-rated door and frame assemblies that comply with NFPA 80 and have been tested, listed, and labeled in accordance with NFPA 252-95 or CAN4-S104-M80 (R1985) by a recognized independent testing and inspection agency acceptable to authorities having jurisdiction. Where fire-rated door or frame assemblies are indicated or required by essential detention features such as security glazing or accessories do not meet the criteria for labeling, manufacturer shall provide equivalent construction and "Certificate of Equivalence" along with specific documentation in the shop drawing submittal of why each door or frame assembly does not meet labeling criteria.
- .6 Quality Control Procedures: The Contractor shall appoint, in writing, a Quality Control Representative for installation of all frames. The Contractor's quality control organization will be reviewed at the Security Coordination Meeting. The Quality Control Representative shall personally check and verify each frame opening for tolerances specified using attached Frame Tolerance Verification Form for each door. For masonry installation check at initial setting, masonry half up and masonry completed around frame. Check concrete installations including precast at initial setting and upon completion of concrete pour. Additionally, check precast concrete after site installation. If the last check indicated above shows deviation from specified tolerances, undertake remedial corrections, subject to MBS Designee approval, as required to show final post-correction tolerances within specified range. Certify tolerance compliance by signature of Contractor and Security Hardware Installer at

each door's Frame Tolerance Verification Form. Accuracy of frame installation tolerances will be reviewed by the MBS Designee using a Bi-Directional Level, Model No. 79 manufactured by the Bi-Directional Level Co., Tacoma, Washington.

- .7 Manufacturer shall provide documentation of labeling ability as required on specified assemblies.
- .8 If requested, manufacturers shall provide evidence of having personnel and plant and equipment capable of fabricating hollow metal security door and frame assemblies of type specified. Manufacturers shall have a minimum of 5 (three) years of experience of regularly and successfully providing types of security doors and frames required for the Project. Substantiate with list of representative projects where security door and frames were installed including dates of Projection completion.

1.05 DELIVERY, STORAGE, AND HANDLING

- .1 Protect security hollow metal doors, frames, and other items during shipment to assure delivery in factory condition. Contractor shall verify doors are delivered as specified.
- .2 Promptly clean and touch up with rust inhibitive primer or galvanizing repair paint as applicable, any scratches or minor disfigurement caused in shipping or handling. Touch-up shall be continuous during construction.
- .3 Remove wrappings or coverings from doors and frames immediately upon delivery to the project site.
- .4 Store all materials in a dry covered area. Place all materials on planking or blocking, at least 100mm off of the ground, 50 mm (2") off of a paved area or floor slab. Do not store flat. Store doors and frames in an upright position with heads upper most. Place no more than 5 single opening frames or 3 multi-opening frames in a group. Provide, by means of wood strips, a space of at least 6 mm (1/4") between all units to permit air circulation.

1.06 COORDINATION SEQUENCING AND SCHEDULING

- .1 Jamb face dimensions on details are nominal. Coordinate to provide jamb capacity required to accommodate hardware. Coordinate incorporation of modified frame dimensions into wall construction.
- .2 Coordinate installation with SECURITY GLAZING, SECURITY HARDWARE, SECURITY ACCESSORIES, and Division 13 sections.

2. Products**2.01 MATERIALS**

- .1 Galvanized Steel Sheets: (G90) Mill phosphatize in addition to coating specified at referenced SHM standard. Provide at shower doors and frames and other doors and frames where indicated as well as at exterior doors and frames. Sheet steel: commercial grade to ASTM A568/A568M, Class 1, hot-dip galvanized to ASTM A653/A653M, coating designation to ASTM A653/A653M, A25 (ZF75), known commercially as 'Colourbond', 'Satincoat', or 'Galvanneal'. Minimum base steel thickness as specified below.
- .2 Supports and Anchors: Same material as frame including gage and galvanizing where indicated.
- .3 Inserts, Bolts, and Fasteners: Manufacturer's standard units. Hot-dip galvanize in compliance with ASTM A 153, Class C or D as applicable at exterior walls and where opening is indicated to be galvanized.

2.02 FABRICATION

- .1 Doors:
 - .1 Fabricate door with face sheets both sides to overall thickness of 50.8 mm (2"). Each face sheet shall be 1 piece construction formed to corner and meet at middle of door thickness with continuous weld on edges.
 - .1 Interior Doors: Secondary Security Doors. Provide minimum 1.91 mm (14 gauge) sheet steel faces.
 - .2 Exterior Doors: Primary Security Doors. Provide minimum 1.91 mm (14 gauge) galvanized steel faces.
 - .2 Stiffeners: Extend full height top to bottom and maximum 75 mm(3") from door sides. Where stiffeners are not continuous between face sheets, weld internal joints 100 mm (4") o.c. max. Cope at hardware preparations only. Provide one of the following stiffener types:
 - .3 Truss type – 0.38 mm minimum steel continuous truss design (in horizontal section) with truncated panel points welded to face sheets at 75 mm(3") o.c. maximum (horizontal and vertical).
 - .4 Edge Channels: **Continuously** welded to both face sheets.
 - .5 Flush Closing Channels: Provide at door bottom and top welded in place at corners and at 150 mm(6") o.c. max.

- .6 Insulation: Core mineral fiber 48 kg/cubic meters density minimum.
- .7 Food Pass: Provide where indicated on drawings.
- .8 Hardware Reinforcements and Preparations: Comply with referenced SHM standard and the following:
 - 1. Strike Plate: Do not cut edge channel to receive entire strike or keeper. Provide punched opening to engage bolt in edge channel matching cut-out in strike plate.
 - 2. Drilling and tapping for surface applied hardware may be done at project site.
- .2 Frames:
 - .1 Interior Frames and Windows: Provide minimum 2.7 mm (12 gauge) steel.
 - .2 Exterior Frames: Provide minimum 2.7 mm (12 gauge) galvanized steel.
 - .3 Frame Fill: Prepare heads, jambs, and sills abutting structure, walls, or floors for solid anchorage with full grout fill. Exclude grout from mullions except where otherwise indicated.
 - 1. Grout Guards: At frames to be grouted, tightly weld 0.45 mm(0.018") minimum steel grout guards at screw holes, cut outs, and hardware preparations including those for silencers, removable glazing stops, locksets, pushbuttons, strike plates, hinges, etc. Additionally at hinge preparations Contractor to provide polyurethane or polystyrene foam fill or otherwise tightly seal grout guards to keep screw holes grout free.
 - 2. Grout and Anchor Access Holes: When required-See drawing detail. Provide access holes in frames for anchoring frames in completed concrete or masonry openings and where, due to sequence of construction, frames cannot be grout filled from above. Provide access holes in frames with backup plates and closer plates as detailed. After frame anchorage and grouting, continuously weld closer plate in the field, grind smooth, and touch up prime coat or galvanizing as applicable so that access hole is not apparent. Indicate proposed access hole locations on shop drawing submittal for review.

- .4 Hardware Reinforcements and Preparation: Comply with referenced SHM standard.
 - .1 Hinges: Weld 2.7 mm(0.106") minimum steel angle(s) at back of frame face and hinge reinforcement to resist deformation under swinging door load.
 - .2 Strike Plate: Weld 25 mm(1") long at each of four sides to frame. Provide punched openings to engage bolt in reinforcing matching cut-out in strike plate.
 - .3 Concealed Hardware: Provide grout boxes to enclose item. Provide welded in mounting tabs to suit.
 - .4 Surface Applied Hardware: Drilling and tapping may be done at project site.
- .5 Fabricate any frames requiring concealed and/or electronic or pneumatic hardware with welded on junction boxes of a sufficient size to properly encapsulate and protect the wiring connections and hardware from damage of concrete or drywall, and supply and install to these junction boxes, sufficiently sized conduit which is to vertically terminate 300 mm(12") above the frame header.
- .6 Frame Anchors (Masonry):
 - .1 Floor Anchors: Secure door jambs at floor line in accordance with referenced SHM standard. To be the same gage as the frame material (12ga)
 - .2 Sill Anchors: Where indicated on drawings, provide 3.4 mm (1/8") continuous bent plate channel set in sealant, as specified in Division 7 SEALANTS AND CAULKING section, with 10 mm (0.0394") diameter x 75 mm(3") expansion bolt anchors at 400 mm(16") o.c.
 - .3 Jamb Anchors: Comply with referenced SHM standard except space at 406 mm (16") o.c. maximum in masonry.
 - .4 Head Anchors: Provide loose "T" anchors spaced 400 mm(16") o.c. at heads of frames in masonry openings more than 1.2 m (0.047")wide. Fabricate head anchors of same gauge as frame, 50 mm (2")wide, with 255 mm(10") long leg of "T" punched to engage lintel reinforcement.

- .7 Completed Opening Frame Anchors: Provide expansion anchor detail as indicated on the drawing for frame installation in completed concrete and masonry openings and where indicated on the drawings. Space anchors at same interval as specified for masonry frame anchors above unless otherwise indicated. Provide Grout and Anchor Access Hole in frame as specified above. Provide 2.7 mm (0.106") x 50 mm (2") minimum plate across frame throat welded both sides and 10 mm (.46") diameter center hole aligned to access hole. Anchor plate to wall with 10 mm (0.46") diameter x 75 mm (3") minimum one-piece sleeve type anchor bolt.
- .3 Removable Glazing Stops
 - .1 Provide 25.4 x 25.4 x 3.4 mm (1"x1"x 1/8") angle fastened to opening frame at 150 mm (6") on center and 75 mm (3") maximum from corners. Provide Torx Security Plus, round, pan, or oval head 1/4-20 or 1/4-28, machine screw security fasteners.
 - .2 All exterior or shower area removable glass stop screws to be stainless steel Torx Security Plus security screws as above listed.
- .4 Electrical and Security Systems Items:
 - .1 Provide conduit in doors and frames at time of fabrication interconnecting electric locksets, door position switches, callbuttons, key switches, electric hinges, keeper switches, etc., indicated in SECURITY HARDWARE sets.

3. Execution

3.01 INSTALLATION

- .1 Precise written records shall be prepared and maintained by the frame installer documenting that they have been instructed as to the proper installation procedures and tolerances acceptable to this project and that the installation of all frames, screens, and windows comply. The General Contractor shall periodically review all frame, screen, and window installations and sign-off as accepted in conjunction with the Section Sub-Contractor prior to the installation of any doors or hardware.
- .2 Submit written verification that frames are set plumb and true with Security Hardware Installer certifying that frames are in tolerance prior to installation of hardware. Frames and doors will not be accepted until verifications and certifications have been submitted and reviewed by MBS Designee. Install frames in strict accordance with maximum 1.5 mm tolerance (+ or -) for plumbness, squareness, alignment, and twist defined in referenced SHM standard.

- .2 Locate hardware on doors and frames as follows:
 - .1 Frame Mounted Lock or Latchsets: From floor line locate lock or latch bolt centerline up 1024 mm (40.313") except at exit doors with auxiliary latchset locate frame mounted lock or latch bolt centerline up 1270 mm (50") with auxiliary latchset knob or lever rose up 815 mm (32").
- .3 Provide door edge clearances as follows:
 - .1 Provide no less than 1.5 mm (1/16") clearance and no more than 1/8" or as per hardware manufacturer clearance requirements, at door heads, jambs, and pair meeting edges.
 - .2 Where carpet is greater than 13 mm (1/2") thick increase undercut to maintain 6 mm (1/4") clearance.
- .4 Provide full metal hinge shims and make adjustments necessary to provide clearances required. Use methods of adjustment recommended and defined in referenced SHM standard.
- .5 Firmly secure and fully grout frame jambs, head, and sill to walls.
- .6 Coordinate with SECURITY HARDWARE manufacturer to insure proper operation of door, frame, and hardware.

3.02 CLEAN AND ADJUST

- .1 Cleaning: Clean frames of mortar, concrete, or any other substances.
- .2 Immediately, upon delivery at job site and continuously during construction, sand and clean any rust, abrasions, scratches, or field fabrication and welding damage to galvanized and shop painted surfaces. At affected areas apply 0.05 mm (.001") minimum of galvanizing repair paint or same material used for shop coat primer as applicable.
- .2 Apply complete Division 9 finish paint coatings to contact surfaces of removable glazing stops and corresponding door and frame contact surfaces as well as glazing channels prior to glazing.
- .3 Final Adjustments: Check and readjust operating security hardware items, leaving security hollow metal doors and frames undamaged and in complete and proper operating condition with tolerances as required by Hardware Manufacturers and as specified.

END OF SECTION

1 GENERAL

1.01 REFERENCE STANDARDS

- .1 Aluminum Association (AA)
 - .1 AA DAF 45OL-03(R2009), Designation System for Aluminum Finishes.
- .2 ASTM International (ASTM)
 - .1 ASTM A 123/A 123M-15, Standard Specification for Zinc (Hot-Dip galvanized) Coatings on Iron and Steel Products.
 - .2 ASTM E 1748-95(2009), Standard Test Method for Evaluating the Engagement Between Windows and Insect Screens as an Integral System.
- .3 CSA Group (CSA)
 - .1 AAMA/WDMA/CSA 101/I.S.2/A440-11(R2016), NAFS - North American Fenestration Standard for Windows, Doors, and Skylights.
 - .2 CSA A440S1-09, Canadian Supplement to AAMA/WDMA/CSA 101/1.S.2/A440, NAFS - North American Fenestration Standard for Windows, Doors, and Skylights.
 - .3 CAN/CSA-A440.2-14/A440.3-14, Fenestration energy performance/User guide to CSA A440.2, Fenestration energy performance.
 - .4 CAN/CSA-A440.4-07(R2016), Window, Door, and Skylight Installation
 - .5 CAN/CSA-Z91-02(R2013), Health and Safety Code for Suspended Equipment Operations.

1.02 ADMINISTRATIVE REQUIREMENTS

- .1 Pre-Installation Meetings:
 - .1 Convene pre-installation meeting 1 week prior to beginning work of this Section and on-site installation, with Contractor's Representative and Departmental Representative in accordance with Section 01 31 19 - Project Meetings to:
 - .1 Verify project requirements.
 - .2 Review installation and substrate conditions.
 - .3 Co-ordination with other construction subtrades.
 - .4 Review manufacturer's written installation instructions and warranty requirements.

1.03 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 windows and include product characteristics, performance criteria, physical size, finish and limitations.
 - .2 Submit 2 copies of WHMIS MSDS in accordance with Section 01 35 29.06 - Health and Safety Requirements.

- .3 Shop Drawings:
 - .1 Indicate materials and details in full size scale for head, jamb and sill, profiles of components, interior and exterior trim junction between combination units elevations of unit, anchorage details, location of isolation coating, description of related components and exposed finishes fasteners, and caulking. Indicate location of manufacturer's nameplates.
 - .2 Indicate locations, dimensions, openings and requirements of related work.
- .4 Samples:
 - .1 Submit for review and acceptance of each unit.
 - .2 Samples returned for inclusion into work.
 - .3 Submit one representative model complete full size window sample of each type window.
 - .4 Include frame, sash, sill, glazing and weatherproofing method, insect screens, surface finish and hardware. Show location of manufacturer's nameplates.
 - .5 Include 150 mm long samples of head, jamb, sill, meeting rail mullions to indicate profile.
- .5 Test and Evaluation Reports:
 - .1 Submit test reports from approved independent testing laboratories, certifying compliance with specifications.
 - .2 All test reports that reference the NAFS must include, on the first page, a summary of the results including, at minimum:
 - .1 The product manufacturer.
 - .2 The type of product.
 - .3 The model number/series number.
 - .4 The primary product designation.
 - .5 The secondary product designation.
 - .1 Positive design pressure.
 - .2 Negative design pressure.
 - .3 Water penetration resistance test pressure.
 - .4 Canadian air infiltration and exfiltration levels.
 - .6 The test completion date.
 - .3 The report will also contain the following information:
 - .1 Test dates.
 - .2 Report preparation dates.
 - .3 Test information retention period.
 - .4 Location of testing facilities.
 - .5 Full description of test samples, including:
 - .1 Anodized finish, weathering characteristics wood preservative.
 - .2 Condensation resistance.
 - .3 Safety drop - vertical sliding windows only.
 - .4 Block operation - sliding windows only.
 - .5 Sash strength and stiffness - operable casement projecting.
 - .6 Sash pull-off - vinyl windows.
 - .7 Forced entry resistance.

- .8 Mullian deflection - combination and composite windows.
- .6 Complete description of amendments, as applicable.
- .7 Conclusion.
- .8 Drawings signed by the testing laboratory, if provided.

1.04 CLOSEOUT SUBMITTALS

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

1.05 QUALITY ASSURANCE

- .1 Test and Evaluation Reports:
- .2 Submit test reports from approved independent testing laboratories, certifying compliance with specifications.
- .3 Test reports that reference the NAFS include, on the first page, a summary of the results including, at minimum:
 - .1 Product manufacturer.
 - .2 Type of product.
 - .3 Model number/series number.
 - .4 Primary product designation.
 - .5 Secondary product designation.
 - .1 Positive design pressure.
 - .2 Negative design pressure.
 - .3 Water penetration resistance test pressure.
 - .4 Canadian air infiltration and exfiltration levels.
 - .6 Test completion date.
- .4 Report to contain the following information:
 - .1 Test dates.
 - .2 Report preparation dates.
 - .3 Test information retention period.
 - .4 Location of testing facilities.
 - .5 Full description of test samples, including:
 - .1 Anodized finish, weathering characteristics wood preservative.
 - .2 Condensation resistance.
 - .3 Safety drop - vertical sliding windows only.
 - .4 Block operation - sliding windows only.
 - .5 Sash strength and stiffness - operable casement projecting.
 - .6 Sash pull-off - vinyl windows.
 - .7 Forced entry resistance.
 - .8 Mullian deflection - combination and composite windows.
 - .6 Complete description of amendments, as applicable.
 - .7 Conclusion.
 - .8 Drawings signed by the testing laboratory, if provided.
- .2 Certifications: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

1.06 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 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 windows from nicks, scratches, and blemishes.
 - .3 Replace defective or damaged materials with new.
- .4 Packaging Waste Management: remove for reuse and return by manufacturer of pallets, crates, padding, and packaging materials in accordance with Section 01 74 21.

2 PRODUCTS**2.01 MATERIALS**

- .1 Sheet aluminum: Alloy 1100, F temper, 1.5 mm ($\frac{3}{16}$ ") or 3 mm ($\frac{1}{8}$ ") minimum thickness, exposed sheet finished to match frames as specified above
- .2 Glass: Clear or Tinted, as indicated in window schedule, sealed glass units as specified under Section 08 80 00 Glazing
- .3 Fasteners: To ASTM A167, stainless steel, type 304 selected to prevent galvanic action with the components fastened, of suitable size to sustain imposed loads
- .4 Gaskets: Neoprene or EPDM with dimensional tolerances and durometer hardness and of suitable size and shape to meet the requirements of the specifications and their specific application. Gaskets shall be virgin material as manufactured by Tremco Ltd., Tremco Ltd. Gaskets shall conform to Tremco Information Bulletins:

For EPDM - TDB-460-1
For Neoprene - TDB-270-1
- .5 Supporting angles, plates, bars, rods, and other steel accessories: Mild steel CAN3-G40.20/G40.21, shop painted with zinc chromate primer, thickness as required to sustain imposed loads and in no case less than 5 mm ($\frac{3}{16}$ ") thick
- .6 Sealant: Including primer, joint filler, as specified in Section 07 92 00
- .7 Dielectric separator: Bituminous paint
- .8 Thermal separator: Polyvinylchloride, 50 Shore A durometer hardness +5
- .9 Glazing Tape: Refer to Section 08 80 00 Glazing

- .10 Metal air seal/vapour barrier (by window supplier) to be bonded to window frame and extend behind mounting frame. Seal all corners to maintain air sea/vapour retarder. Install flexible flashing with continuous metal retaining strip to lap to interior wall assembly.
- .11 Exterior Fixed Window Frame: To profiles indicated and as required to fulfill performance requirements, nominal thickness 2.5 mm (0.098"), suitable alloy and proper temper for extruding and adequate structural characteristics; and suitable for finishing as specified

2.02 FABRICATION

- .1 Fabricate in accordance with AAMA/WDMA/CSA 101/I.S.2/A440 supplemented as follows:
- .2 Fabricate units square and true with maximum tolerance of plus or minus 1.5 mm for units with a diagonal measurement of 1800 mm or less, and plus or minus 3 mm for units with a diagonal measurement over 1800 mm.
- .3 Face dimensions detailed maximum permissible sizes.
- .4 Brace frames to maintain squareness and rigidity during shipment and installation.
- .5 Finish steel clips and reinforcement with shop coat primer to MPI #79 380 g/m² zinc coating to ASTM A 123/A 123M.

2.03 ALUMINUM FINISHES

- .1 Finish Coatings: All exposed to view surfaces anodized. Conform to AAMA 611, AAM12C22A41, AAMA 611, Architectural Class II Clear Anodic Coating, Color #17 Clear.
- .2 Paint ungalvanized steel clips, supports and reinforcing steel with steel primer or bituminous paint.
- .3 Non-exposed surfaces may be left natural.

2.04 GLAZING

- .1 Glaze windows in accordance with AAMA/WDMA/CSA 101/I.S.2/A440.

2.05 AIR BARRIER AND VAPOUR RETARDER

- .1 Equip window frames with factory site installed air barrier and vapour retarder material for sealing to building air barrier and vapour retarder as follows:
 - .1 Material: identical to, or compatible with, building air barrier and vapour retarder materials to provide required air tightness and vapour diffusion control throughout exterior envelope assembly.
 - .2 Material width: adequate to provide required air tightness and vapour diffusion control to building air barrier and vapour retarder from interior.

3 EXECUTION

3.01 EXAMINATION

- .1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts acceptable for product installation in accordance with manufacturer's written instructions.
 - .1 Visually inspect substrate in presence of Departmental Representative.
 - .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
 - .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Departmental Representative.

3.02 INSTALLATION

- .1 Window installation:
 - .1 Install in accordance with AAMA/WDMA/CSA 101/I.S.2/A440.
 - .2 Arrange components to prevent abrupt variation in colour.
- .2 Sill installation:
 - .1 Install metal sills with uniform wash to exterior, level in length, straight in alignment with plumb upstands and faces. Use one piece mm lengths at each location.
 - .2 Cut sills to fit mm longer than window opening.
 - .3 Secure sills in place with anchoring devices located at ends joints of continuous sills and evenly spaced 600 mm on centre in between.
 - .4 Fasten expansion joint cover plates and drip deflectors with self tapping stainless steel screws.
 - .5 Maintain 6 to 9 mm space between butt ends of continuous sills. For sills over 1200 mm in length, maintain 3 to 6 mm space at each end.
- .3 Caulking:
 - .1 Seal joints between windows and window sills with sealant. Bed sill expansion joint cover plates and drip deflectors in bedding compound. Caulk between sill upstand and window-frame. Caulk butt joints in continuous sills.
 - .2 Apply sealant in accordance with Section 07 92 00 - Joint Sealants. Conceal sealant within window units except where exposed use is permitted by Departmental Representative.

3.03 FIELD QUALITY CONTROL

- .1 Have manufacturer of products supplied under this Section review Work involved in handling, installation/application, protection and cleaning of its products, and submit written reports in acceptable format to verify compliance of Work with Contract.
- .2 Manufacturer's field services: provide manufacturer's field services consisting of product use recommendations and periodic site visits for inspection of product installation in accordance with manufacturer's instructions.

- .3 Schedule site visits to review Work at stages listed:
 - .1 After delivery and storage of products, and when preparatory Work on which Work of this Section depends completed, but before installation begins.
 - .2 Twice during progress of Work at 25% and 60% complete.
 - .3 Upon completion of Work, after cleaning carried out.
- .4 Obtain reports within 3 days of review and submit.

3.04 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11.
 - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11.
- .3 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 21.

3.05 PROTECTION

- .1 Protect installed products and components from damage during construction.
- .2 Repair damage to adjacent materials caused by window installation.

END OF SECTION

1 GENERAL**1.01 REFERENCE STANDARDS**

- .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 Preamsembled 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 A156.12-2005, Interconnected Locks and Latches.
 - .9 ANSI/BHMA A156.13-2002, Mortise Locks and Latches Series 1000.
 - .10 ANSI/BHMA A156.15-2006, Release Devices - Closer Holder, Electromagnetic and Electromechanical.
 - .11 ANSI/BHMA A156.16-2002, Auxiliary Hardware.
 - .12 ANSI/BHMA A156.18-2006, Materials and Finishes.
 - .13 ANSI/BHMA A156.19-2002, Power Assist and Low Energy Power - Operated Doors.
- .2 Canadian Steel Door and Frame Manufacturers' Association (CSDMA)
 - .1 CSDMA Recommended Dimensional Standards for Commercial Steel Doors and Frames - 2009.

1.02 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 Samples:
 - .1 Submit for review and acceptance of each unit.
 - .2 Samples will be returned for inclusion into work.
 - .3 Identify each sample by label indicating applicable specification paragraph number, brand name and number, finish and hardware package number.
 - .4 After approval samples will be returned for incorporation in Work.
- .4 Hardware List:
 - .1 Submit contract hardware list.
 - .2 Indicate specified hardware, including make, model, material, function, size, finish and other pertinent information.
- .5 Test Reports: certified test reports showing compliance with specified

performance characteristics and physical properties.

- .6 Manufacturer's Instructions: submit manufacturer's installation instructions.

1.03 CLOSEOUT SUBMITTALS

- .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.

1.04 MAINTENANCE MATERIAL SUBMITTALS

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

1.05 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.

1.06 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 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 strippable coating.
 - .4 Replace defective or damaged materials with new.
- .5 Packaging Waste Management: remove for reuse and return by manufacturer of pallets, crates, padding, and packaging materials in accordance with Section 01 74 19 - Waste Management and Disposal.

2 PRODUCTS

- .1 All hardware to be provided as listed in the hardware groups.
- .2 No substitutions allowed

2.01 HARDWARE ITEMS

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

2.02 DOOR HARDWARE

- .1 See Hardware Groups 3.06 Schedule

2.03 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.

2.04 KEYING

- .1 Supply Best cylinders for commercial locks to owner
- .2 All keying information will be between RPC Staff and Best lock
- .3 Supply ASSA mogul cylinders to all Detention locks.
- .4 Keying information to be supplied by RPC staff, try to key into existing RPC system if possible.
- .5 Deliver ASSA mogul keys directly to assigned RPC security staff.
- .6 If required by RPC supply temporary construction cylinders to required locks

3 EXECUTION

3.01 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 Use only manufacturer's supplied fasteners.
 - .1 Use of "quick" type fasteners, unless specifically supplied by manufacturer, is unacceptable.
- .8 All detention hardware must be install by a certified detention contractor (DEC)

3.02 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.

3.03 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.

3.04 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 locksets and fire exit hardware.
- .2 Demonstrate operation, operating components, adjustment features, and lubrication requirements.

3.05 PROTECTION

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

3.06 SCHEDULE

Provide the following Door Hardware; refer to Drawings for exact locations.

Group 1

Dr E09a,		New Door/Frame	Detention Grade		
3 ea	Hinge	204FMSS	32D		Southern Steel
1 ea	Elec/Hinge	204E	32D		Southern Steel
1 ea	Elect/Lock	10603E-500C x 24 VDC (swing 49)	32D		Southern Steel
1 ea	Wiring	Lock Pigtail			
1 ea	Closer	PR7570- EBC - Torx (mount push side)	AL		Norton
1 ea	DPS	200MRS-TB x 72" lead	32D		Southern Steel
5 ea	Cut Keys	Mogul			
3 ea	Silencers	By Frame MFG			
1 ea	Card Reader	By Controls Contractor			
1 ea	Controller	By Controls Contractor			

Key to existing code if possible, Mogul key does not match existing Ring Corridor Locks.

Group 2

Dr E12,		New Door/Frame	Detention Grade		
4 ea	Hinge	204FMSS	32D		Southern Steel
1 ea	Elect/Lock	10120AM-2-NL x 24VDC (swing 29)	Galv		Southern Steel
1 ea	Wiring	Lock Pigtail			
1 ea	Closer	PR7570- EBC - Torx (mount push side)	AL		Norton
1 ea	DPS	200MRS-TB x 72" lead	32D		Southern Steel
2 ea	Raised Pull	212C	32D		Southern Steel
5 ea	Cut Keys	Mogul			
1 ea	Card Reader	By Controls Contractor			
1 ea	Controller	By Controls Contractor			
2 ea	Intercom	By Controls Contractor			
3 ea	Silencers	By Frame MFG			

Key to existing code if possible, Mogul key does not match existing Ring Corridor Locks.

Group 3

Dr E05	New Door/Frame	Commercial Grade		
3 ea	Hinge	HTA386 114 x 114	32D	McKinney
1 ea	Mort/Cyl	1E74-C161-RP3	26D	Best
1 ea	Mort/Lock	ML2054VR-CSV-M19V-M04 x L/C	32D	Corbin
1 ea	Wall Stop	250-Torx	26D	Gallery
3 ea	Silencers	SR64	Grey	Ives

Group 4

Dr E13	New Door/Frame	Detention Grade		
3 ea	Hinge	204FMSS	32D	Southern Steel
1 ea	Det/Lock	10514-500C (swing 49)	32D	Southern Steel
1 ea	Closer	PR7570-EBC-Torx (mount push side)	AL	Norton
1 ea	Wall Stop	250-Torx	26D	Gallery
3 ea	Silencers	By Frame MFG		
5 ea	Cut Keys	Mogul		
	Key to existing code if possible,			

Group 5

Drs E04, E07	New Door/ Existing Frame	Commercial Grade		
3 ea	Hinge	HTA386 114 x 114	32D	McKinney
1 ea	Cylinder	1E74-C161-RP3	26D	Best
1 ea	Mort/Lock	ML2054VR-CSV-M04 x L/C	32D	Corbin
1 ea	Closer	PR7570-EBC-Torx (mount push side)	AL	Norton
3 ea	Silencers	SR64	Grey	

Group 6

Dr E36	New Door/ Frame	Commercial Grade		
3 ea	Hinge	HTA386 114 x 114	32D	McKinney
1 ea	Mort/Cyl	1E74-C161-RP3	26D	Best
1 ea	Mort/Lock	ML2054VR-CSV-M19V-M04 x L/C	32D	Corbin
1 ea	Wall Stop	250-Torx	26D	Gallery
3 ea	Silencers	SR64	Grey	Ives

Group 7

Dr E09B	New Door/Existing Frame	Commercial Grade		
3 ea	Hinge	Re-Use Existing		
1 ea	Mort/Cyl	1E74-C161-RP3	26D	Best
1 ea	Elec/Lock	ML20906-SEC-CSB-M04 x L/C	32D	Corbin
1 ea	Door Harness	QC300P		McKinney
1 ea	Closer	PR7570-Torx (mount push side)	AL	Norton
1 ea	Door Loop	TSB-C		Securitron
1 ea	DPS	DPS-M	Black	Securitron
1 ea	Card Reader	By Controls Contractor		
1 ea	Controller	By Controls Contractor		

Group 8

Dr E15A		NewDoor/Frame	Detention Grade	
2 ea	Hinge	204FMSS	32D	Southern Steel
1 ea	Elec/Hinge	204E	32D	Southern Steel
1 ea	Elec/Lock	10605E-500C x 24 VDC (swing 50)	32D	Southern Steel
1 ea	Wiring	Lock Pigtail		
1 ea	Closer	PR7570-Torx (mount pushy side)	AL	Norton
1 ea	DPS	200MRS-TB x 72" Lead	32D	Southern Steel
1 ea	Floor Stop	420	Black	Southern Steel
3 ea	Silencers	By Frame MFG		
5 ea	Cut Keys	Mogul		
2 ea	Intercom	By Controls Contractor (wall mtd)		
Key to existing code if possible,				

Group 9

Dr E15B		NewDoor/Frame	Detention Grade	
2 ea	Hinge	204FMSS	32D	Southern Steel
1 ea	Elec/Hinge	204E	32D	Southern Steel
1 ea	Elec/Lock	10605E-500C x 24 VDC (swing 50)	32D	Southern Steel
1 ea	Wiring	Lock Pigtail		
1 ea	Closer	7570-Torx (mount pull side)	AL	Norton
1 ea	DPS	200MRS-TB x 72" Lead	32D	Southern Steel
1 ea	Floor Stop	420	Black	Southern Steel
3 ea	Silencers	By Frame MFG		
5 ea	Cut Keys	Mogul		
2 ea	Intercom	By Controls Contractor (wall mtd)		
Key to existing code if possible,				

Group 10

Dr E15C, E15D		New Door/Frame	Commercial Grade	
3 ea	Hinge	HTA386 114 x 114 (SSFxNRP)	32D	McKinney
1 ea	Mort/Cyl	1E74-C161-RP3	26D	Best
1 ea	Deadlock	ML2013HS-M04 x L/C	32D	Corbin

Group 11

Dr E17, E18, E19	Existing Cell Doors/ New Frames	Detention Grade
Re-Use all Existing hardware		

Group 12

Dr E16	New Shower Gate
All hardware by Gate Supplier	

END OF SECTION

Hinge Knuckles

Our line includes two, three and five knuckle hinges.

Modern Two Knuckle

This model offers the most security in a standard hinge. The bearing hinges have a concealed stainless steel oil-impregnated bearing. Also, an anti-friction bushing in the door leaf provides additional protection against vertical and lateral wear.

- Plain bearing hinges have an anti-friction component inserted between the two knuckles
- The Moderne two knuckle hinge is available in stainless steel
- Standard and heavy weight
- Pins in all bearing hinges are stainless steel
- Pins in plain bearing hinges are steel Stainless steel pins are available
- Standard hinges are packed with all machine and all wood screws

By design, pins are non-rising, non-removable and tamper protected by a flush, non-removable cap at the end of the barrel. A door can not be removed when in the closed position, thus affording maximum security. Intermediate hinges can be ordered opposite hand and installed upside down, to inhibit removal of the door in an open position

- Available non-removable door (NRD) hinges have a dowel in the barrel. One NRD hinge can be ordered per set
- Two knuckle hinges are handed
- Template hinges are made to conform to U.S. Government standards*

Three Knuckle

Bearing hinges have concealed vertical and lateral thrust twin anti-friction type bearings at both joints.

- Pins in all non-ferrous bearing hinges are stainless steel
- Pins in all ferrous hinges are steel
- Pins in all hinges are non-rising type
- Standard hinges are packed with all machine and all wood screws
- Hinges are reversible for right or left hand except anchor hinges and certain electric hinges
- Template hinges are made to conform to U.S. Government standards*

Five Knuckle

Bearing hinges are furnished with either an oil-impregnated bearing (TA)** or ball bearing (TB). (TA is standard unless TB is specified.) Concealed bearings (TCA) are available.

- Pin stems in all non-ferrous bearing hinges are stainless steel
- Pins in all ferrous hinges are steel
- Pins in all hinges are non-rising type
- Template hinges are made to conform to U.S. Government standards*

**Refer to our website at www.mckinneyhinge.com for additional information regarding ASSA ABLOY bearings.

*Template hinges are made in sizes, gauges, and with screw holes located to conform to ANSI/BHMA A156.7 and U.S. Government standards CS9-65 and SDI. Templates are available on request.

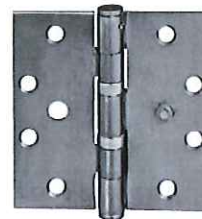
PSF - Prison Safety Feature

A $\frac{7}{16}$ " diameter stud projects from the back of each leaf which slips into a hole in the hinge reinforcing plates in both the door and the frame. This prevents the hinge from being removed even if the screws have been sheared off. This option is available on the HTB786 steel and HTB386 stainless prison hinge only.



SSF - Safety Stud Feature

A stud attached to the face of one leaf rotates into a cavity in the opposite leaf when the door is closed. This option interlocks the two leaves together, preventing the removal of the door even if the pin is removed.



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Hinge Tips

Select tips for additional functionality or to add to the decor.

Button Tips (Standard)

Button Tips and plugs are standard on five knuckle hinges.



Flush Pins (Standard)

Flush pins and plugs are furnished on our two and three knuckle hinges.



Hospital Tips

Hospital tips which feature a one-piece non-removable pin with tapered tips. To order this option prefix our hinge number by "HT". The hospital tip feature by design makes the pin virtually non-removable.



Decorative Tips

Decorative tips enhance the design of your interior. Available for the two or three knuckle hinge in flat, round, grooved or lined tip styles. These hinges are designed to suite with doors and hardware from the ASSA ABLOY Group brands.



Ball Tips

Ball Tips, made of solid brass, are available on three and five knuckle hinges for a more decorative hinge appearance. To order this option add the suffix "BT" to the hinge number.



Steeple Tips

Steeple Tips, made of solid brass, are available on three and five knuckle hinges for a more decorative hinge appearance. To order this hinge option, add the suffix "ST" to the hinge number.



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door opening solutions

800-346-7707 | www.mckinneyhinge.com

Check the web site for the up-to-date catalog

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Hinge Pins

Pins, by design, are non-rising.



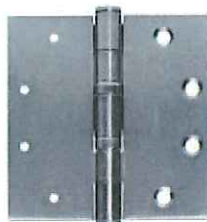
Two Knuckle

Plain Bearing pins are furnished in steel and can be ordered with stainless steel pins as an option. To order this option, add the suffix "SSP" to the hinge number. Pins on bearing hinges are furnished in stainless steel.



Three Knuckle

Pin stems in all non-ferrous bearing hinges are stainless steel. Pins in all ferrous hinges are steel.



Five Knuckle

Pins on all non-ferrous bearing hinges are stainless steel with button tips.

Pins on all ferrous hinges are steel. These hinges are available with optional stainless steel pins. To order these options, add the suffix "SSP".

Non-Removable Pins

NRP

A set screw is driven into the barrel of the hinge that is inaccessible when the door is in the closed position. To order, add the suffix "NRP" to the hinge number.

NRD

Two knuckle hinges are available with a non-removable pin which features a dowel which is force fitted into the jamb leaf. When the door is hung, the pin is completely concealed and impossible to remove. One doweled hinge is usually furnished per set of three. To order, add the suffix "NRD" to the hinge number.

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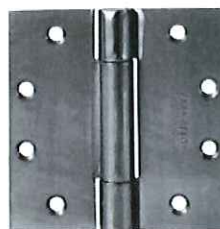
Three Knuckle Heavy Weight Series

Recommended for use on high frequency and/or heavy wood or metal doors in schools, hospitals or other public buildings where heavy traffic is experienced.

- Heavy weight hinges should be used on all extra heavy doors or those exposed to high frequency use
- Use for the common flush door/frame/wall application
- Beveled Edge - where doors are beveled on hinge side specify TA5386 or TA5786
- For available finishes see page 29
- Decorative flat tips are available on 4½" and 5"

TA386

TA786

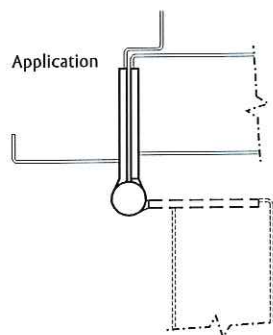


No.	ANSI Cross Reference	Base Material	Weight
TA386	A5111	Stainless	HVY
TA386	A2111	Brass	HVY
TA786	A8111	Steel	HVY

Specifications

Inches	mm	Gauge	No. of Holes	Fasteners	
				Machine	Wood
4½" x 4"	114.3 x 101.6	.180	8	½ x 12-24	1¼ x 12
4½" x 4½"	114.3 x 114.3	.180	8	½ x 12-24	1¼ x 12
5" x 4½"	127 x 114.3	.190	8	½ x 12-24	1¼ x 12
5" x 5"	127 x 127	.190	8	½ x 12-24	1¼ x 12
6" x 5"	152.4 x 127	.203	10	½ x 1¼-20	1½ x 14
6" x 6"	152.4 x 152.4	.203	10	½ x 1¼-20	1½ x 14

* Not available in Brass Base material.



Options:

Code	Description
NRP	Non-Removable Pin
RC	Round Corner – ¼" radius furnished unless specified otherwise
HT	Hospital Tip
SSF	Safety Stud Feature
QC	ElectroLynx® Hinge – 2, 4, 6, 8, 10 or 12 wire available
CC	Concealed Circuit – 2, 4, 6, 8, 10 or 12 wire available
CC-18	Concealed Circuit – 2, 4, 6, 8 or 10 wire available (2-18AWG wires and the remainder 28AWG wires)
MM	Magnetic Monitoring
FT	Flat Decorative Tip

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Features

Handing

Handed; quick reversible. The lockset can be re-handed without disassembling the lock case; see page 81.

Door Thickness

1-3/4" (44mm) standard.
Optional door thicknesses available; see Quick Codes, page 76.

Backset

2-3/4" (70mm).

Lockcase

Heavy-gauge steel, 5-7/8" (149mm) x 4" (102mm) x 15/16" (24mm).
Optional: non-ferrous lockcase for corrosion resistance; see Quick Codes, page 76.

Front

Heavy-gauge steel, 8" (203mm) x 1-1/4" (32mm) x -3/32" (2mm). Accommodates flat doors and doors beveled 1/8" (3mm) in 2" (51mm). Furnished 1-1/16" (27mm), optional D138, wide for 1-3/8" (35mm) doors.

Armored Front

Wrought brass, bronze or stainless steel attached by machine screws to lockcase front. ML2000VR utilizes security Torx® screws.

Latchbolt

2-piece mechanical with anti-friction insert, 5/8" (16mm) x 1" (25mm) x 3/4" (19mm) throw.

Auxiliary Latchbolt

9/16" (14mm) effective throw and 3/8" (10mm) effective auxiliary latch deadlocking.


Deadbolt

One-piece stainless steel, 19/32" (15mm) x 1-1/4" (32mm) x 1" (25mm) throw.

Occupancy Indicator

Occupancy indicators for use with ML2000 x sectional trim. Design features option for dual indicators on double cylinder functions, confirming door is secured from either side. Emergency override standard for all non-keyed functions.

Hub

- Knob: stainless steel, 9/32" (7mm) x 9/32" (7mm).
- Lever: steel, 5/16" (8mm). (Including )

Spacing

C. to c. knob/lever to cylinder: 3-5/8" (92mm).
C. to c. knob/lever to thumbturn: 2-7/16" (62mm).

Strike

Wrought brass, bronze or stainless steel, ANSI straight lip standard, 4-7/8" (124mm) x 1-1/4" (32mm) x 1-1/8" (29mm) lip to center. Optional strikes, lip lengths and ANSI wrought strike box available; see Quick Codes, page 76.

Cylinder

Brass, 6-pin, L4 keyway, 0-bitted standard. Optional cylinders available; see Quick Codes, page 75.

Keys

Two nickel silver standard.

Keying Features Available

Master keying
Construction master keying
Visual key control
Concealed key control
Plug only to show (concealed shell)
7-pin cylinder
Security cylinder
Access 3® cylinder
Pyramid cylinder
Interchangeable core (IC)
Security IC
Pyramid IC
Access 3® IC
Master ring cylinder
Blockout cylinder
Flex head cylinder

Warranty

Ten-year limited.

Certification/Compliance

ANSI/BHMA

Certified A156.13 Series 1000, Operational and Security Grade 1. Meets A117.1 Accessibility Code.



Federal

Meets FF-H-106C.

UL/cUL-UL10C Positive Pressure

All locks listed for A label and lesser class doors, 4' (122cm) x 10' (305cm) single or 8' (244cm) x 10' (305cm) pair (3 hour fire door). Letter F and UL symbol on armored front indicate listing.

Any retrofit or other field modification to a fire rated opening can potentially impact the fire rating of the opening, and Corbin Russwin, Inc. makes no representations or warranties concerning what such impact may be in any specific situation. When retrofitting any portion of an existing fire-rated opening, or specifying and installing a new fire-rated opening, please consult with a code specialist or local code official (Authority Having Jurisdiction) to ensure compliance with all applicable codes and ratings.


California State Reference Code

(Formerly Title 19, California State Fire Marshal Standard)

All levers with returns, return to within 1/2" (13mm) of door face.

Windstorm/Hurricane

Certified (refer to local codes).

 Indicates ML2000VR (Vandal Resistant) availability.

Features

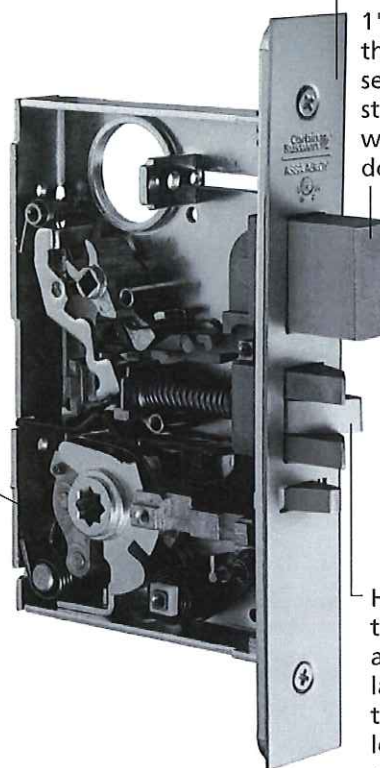
ML2000 Series

Finishes

ANSI/BHMA 605 (US3)	Bright Brass
ANSI/BHMA 606 (US4)	Satin Brass
ANSI/BHMA 611 (US9)	Bright Bronze
ANSI/BHMA 612 (US10)	Satin Bronze
ANSI/BHMA 613 (US10B)	Oxidized Bronze, oil rubbed
613E (US10BE)	Dark Oxidized Satin Bronze - Equivalent
613L	Dark Oxidized Satin Bronze, Clear Coated
ANSI/BHMA 618 (US14)	Bright Nickel Plated
ANSI/BHMA 619 (US15)	Satin Nickel Plated
ANSI/BHMA 625 (US26)	Bright Chromium Plated
ANSI/BHMA 626 (US26D)	Satin Chromium Plated
626C	Satin Chromium Plated with MicroShield®
ANSI/BHMA 629 (US32)	Ⓡ Bright Stainless Steel
ANSI/BHMA 630 (US32D)	Ⓡ Satin Stainless Steel
630C	Satin Stainless Steel with MicroShield®
722	Black Oxidized Bronze, oil rubbed



Highly engineered
3 spring design for
smooth, crisp, and
responsive operation



Adjustable front
accommodates square
or beveled doors

1" deadbolt
throw offers
security and
strength even
with excessive
door gaps

Heavy-duty,
two-piece 3/4"
anti-friction
latchbolt
throw requires
less force to
close door

Ⓡ Indicates ML2000VR (Vandal Resistant) availability.

ML2000.4







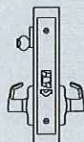

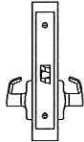


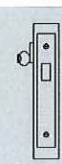






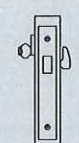



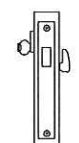


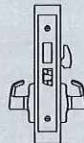

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Functions

ML2000 Series

Outside	Inside	Series/Function	Type	ANSI No.	Function Description
 A01 	 A01 	ML2002 (HSS)	Classroom Intruder		<ul style="list-style-type: none"> Latchbolt by grip either side, unless outside grip is locked by key either side. Outside grip locked or unlocked by cylinder either side. Auxiliary latch deadlocks latchbolt. Inside grip always free.
 A01 	 	ML2003 (HSS)	Classroom		<ul style="list-style-type: none"> Lock or unlock outside grip by key. Latchbolt by grip either side, unless outside grip is locked. Inside grip always free. Auxiliary latch deadlocks latch.
		ML2010 (VR) (HSS)	Passage or Closet	F01	<ul style="list-style-type: none"> Latchbolt by grip either side. Both grips always free.
 A01 		ML2011 (VR) (HSS)	Deadlock	F18	<ul style="list-style-type: none"> Deadbolt by key outside. No inside operation.
 A01 	 A01 	ML2012 (HSS)	Deadlock	F16	<ul style="list-style-type: none"> Deadbolt by key either side.
 A01 	 	ML2013 (HSS)	Deadlock	F17	<ul style="list-style-type: none"> Deadbolt by key outside or by thumbturn grip inside.
 A01 	 	ML2017 (HSS)	Classroom Deadlock	F29	<ul style="list-style-type: none"> Deadbolt by key outside. Thumbturn grip inside retracts deadbolt only; will not project deadbolt.
	 	ML2020 (VR) (HSS)	Privacy Bedroom or Bathroom	F02	<ul style="list-style-type: none"> Latchbolt by grip* either side, when deadbolt is retracted. Deadbolt by thumbturn grip inside or by emergency release tool outside. No simultaneous deadbolt and latch retraction Non-panic release Not available with M19S or M19SN

 Indicates Indicator option is available

 Indicates Indicator option is available

* When lever handles are furnished, both outside and inside are locked when deadbolt is projected.


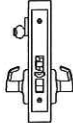



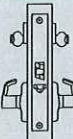


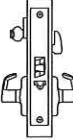


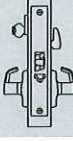


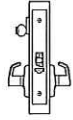



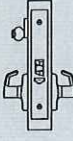


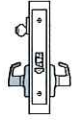



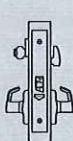

(VR) Indicates function available in Vandal Resistant Trim.

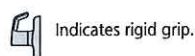
(HSS) Indicates function available in Anti-Harm Trim


ML2000.5


Functions

ML2000 Series

Outside	Inside	Series/Function	Type	ANSI No.	Function Description
 A01		ML2051  	Entrance or Office	F04	<ul style="list-style-type: none"> Latchbolt by key when outside grip locked by toggle action stop. Latchbolt by grip either side, unless outside grip is locked by toggle-action stop. Auxiliary latch deadlocks latchbolt. Inside grip always free.
 A02	 A02	ML2052 	Classroom Intruder	F32	<ul style="list-style-type: none"> Latchbolt by grip either side, unless outside grip is locked by key either side. Latchbolt by key when outside grip locked. Auxiliary latch deadlocks latchbolt. Inside grip always free. Outside grip remains locked unless unlocked by key either side. <p>Note: Not available with indicator, specify ML2002.</p>
 A02		ML2053 	Entrance or Office	—	<ul style="list-style-type: none"> Latchbolt by grip either side, unless outside grip is locked or unlocked by key or thumbturn. Outside grip locked or unlocked by key or thumbturn. Latchbolt by key when outside grip locked. Auxiliary latch deadlocks latchbolt. Inside grip always free.
 A01		ML2054 	Entrance or Office	F04	<ul style="list-style-type: none"> Latchbolt by grip either side, unless outside grip is locked. Outside grip locked or unlocked by thumbturn. Latchbolt by key when outside grip locked. Auxiliary latch deadlocks latchbolt. Inside grip always free. Multi-function capable, see page 10 for more info.
 A02		ML2055  	Classroom	F05	<ul style="list-style-type: none"> Latchbolt by grip either side, unless outside grip is locked by key outside Latchbolt by key when outside grip locked Auxiliary latch deadlocks latchbolt Inside grip always free Outside grip remains locked unless unlocked by key <p>Note: Not available with indicator, specify ML2003</p>
 A02		ML2056 	Classroom Holdback	F06	<ul style="list-style-type: none"> Latchbolt by grip either side, unless outside grip is locked or unlocked by key. Latchbolt by key outside when outside grip is locked. Latchbolt can be held in a retracted position by key, or released by key. Auxiliary latch deadlocks latchbolt. Inside grip always free. <p>Note: Not approved for use on U.L. fire listed applications.</p>
 A01		ML2057  	Storeroom or Closet	F07	<ul style="list-style-type: none"> Latchbolt by grip inside or by key outside. Outside grip always rigid. Auxiliary latch deadlocks latchbolt. Inside grip always free.
 A02		ML2058 	Entrance or Office Holdback	—	<ul style="list-style-type: none"> Latchbolt by grip either side, unless outside grip is locked. Outside grip locked or unlocked by key or thumbturn. Latchbolt retracted by key outside when outside grip is locked. Latchbolt can be held in a retracted position by key or thumbturn, or released by key or thumbturn. Auxiliary latch deadlocks latchbolt. Inside grip always free. <p>Note: Not approved for use on U.L. fire listed applications.</p>


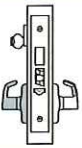

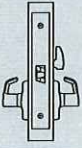

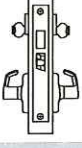

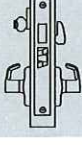

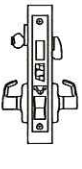

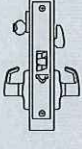

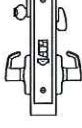
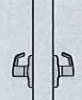


 Indicates function available in Vandal Resistant Trim.

 Indicates function available in Anti-Harm Trim.


Functions

ML2000 Series


Outside	Inside	Series/Function	Type	ANSI No.	Function Description
 A01		ML2059	Security Storeroom or Closet	—	<ul style="list-style-type: none"> Latchbolt and deadbolt by grip inside or by key outside Inside grip simultaneously retracts deadbolt & latchbolt Outside grip always rigid Auxiliary latch deadlocks latchbolt Inside grip always free
 A01		ML2060 (HSS)	Privacy	F22	<ul style="list-style-type: none"> Latchbolt by grip either side, except when outside grip is locked by thumbturn inside. Operating inside grip, closing door or operating emergency key outside unlocks outside grip. Inside grip always free. Not available with M19S or M19SN
 A01		ML2062	Intruder Deadbolt	F33	<ul style="list-style-type: none"> Latchbolt by grip either side, unless outside grip is locked by projection of deadbolt Deadbolt thrown or retracted by key from either side Inside grip simultaneously retracts latchbolt and deadbolt and unlocks outside grip Inside grip always free
 A01		ML2065 (VR)	Dormitory or Entrance	F13	<ul style="list-style-type: none"> Latchbolt by grip either side unless outside grip locked by projection of deadbolt. Deadbolt thrown or retracted by key outside or by thumbturn grip inside. Inside grip simultaneously retracts latchbolt and deadbolt and unlocks outside grip. Inside grip always free.
 A01		ML2067 (VR)	Apartment or Dormitory	F20	<ul style="list-style-type: none"> Latchbolt by grip either side, unless outside grip is locked by toggle-action stop or by projection of deadbolt. Deadbolt thrown or retracted by key outside or by thumbturn grip inside. Inside grip simultaneously retracts latchbolt and deadbolt; outside grip remains locked. Auxiliary latch deadlocks latchbolt. Outside grip unlocked by toggle-action stop <p>Note: Occupancy Indicator shows deadbolt position only</p>
 A01		ML2068 (HSS)	Privacy or Apartment		<ul style="list-style-type: none"> Latchbolt by grip either side, unless outside grip is locked Outside grip locked or unlocked by key or thumbturn Operating inside grip, closing the door or using key unlocks outside grip Inside grip always free Auxiliary latch deadlocks latch
 A02		ML2069 (HSS)	Institutional Privacy	F26	<ul style="list-style-type: none"> Latchbolt by grip either side, except when outside is locked by thumbturn inside. Operating inside grip or closing door unlocks outside grip. Key outside retracts latch at all times, even if thumbturn is held in locked position. Auxiliary latch deadlocks latchbolt.
		ML2070	Full Dummy Trim	—	<ul style="list-style-type: none"> Grips act as pulls only; no operation.

 Indicates Occupancy Indicator option is available

 Indicates function available in Vandal Resistant Trim.

 Indicates Indicator option is available

 Indicates function available in Anti-Harm Trim.

 Indicates rigid grip.

ML2000.8

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Vandal Resistant Trim

ML2000 Series

ML2000VR Series Vandal-Resistant Mortise Trim

Applications

Designed for high-traffic commercial, industrial, institutional and government buildings that require a greater degree of security and vandal resistance not found on other mortise trims. Applications may include:

- Schools and universities
- Computer rooms
- Hospital pharmacies
- Banks
- Storage facilities
- Government installations
- Prisons and detention facilities
- Evidence rooms
- Weapons storage

Advantages

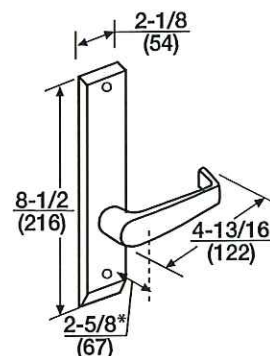
- Flush-mounted conventional fixed core cylinder
- Cast escutcheons and levers; double through-bolted
- Torx® pin tamper resistant security screws
- Armored front to protect against tampering
- Free-floating spindle self-adjusts for door thicknesses from 1-3/4" to 2-1/4"
- Levers remain attached if spindle is broken



Newport

NSV

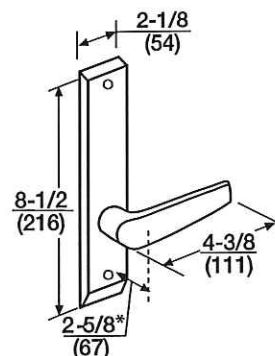
Lever: Cast stainless steel
Escutcheon: Cast stainless steel
Door thickness: 1-3/4" (44mm) standard, 2" (51mm) specify D200, 2-1/4" (57mm) specify D214



Citation

CSV

Lever: Cast stainless steel
Escutcheon: Cast stainless steel
Door thickness: 1-3/4" (44mm) standard, 2" (51mm) specify D200, 2-1/4" (57mm) specify D214



Notes: This trim only available for ML2000VR and ML20900VR locksets.
Only available in 630 (US32D) finish.

Options & Accessories

ML2000 Series

Occupancy Indicators*

Occupancy indicators for use with ML2000 x sectional trim. Design features option for dual indicators on double cylinder functions, confirming door is secured from either side. Emergency override standard for all non keyed functions.

Features:

- Design eliminates unauthorized entry via indicator tampering
- Non keyed indicators available with emergency slot turn override
- Use with both keyed and non-keyed functions
- For use outside, inside or both sides of door
- Choose outside indicator text: Vacant/Occupied or Secure/Unsecure
- Inside indicators always read Secure/Unsecure
- Torx pin security fasteners (standard with cylinder indicators)

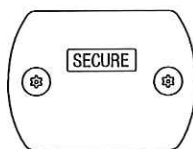


Indicators – Keyed Functions

- Can be used on either side of door for double cylinder functions
- Compatible with select sectional trim rose designs: A, B, E3, H, J, W, X, Y
- Not available with Master Ring cylinders

Secure (M19S)	
Door	Packet
1-3/8" (35mm)	720F21 x Finish
1-3/4" (44mm) - 2" (51mm)	720F22 x Finish
2-1/4" (57mm)	720F24 x Finish
Over 2-1/4" (57mm)	720F25 x Finish

Vacant (M19V)	
Door	Packet
1-3/8" (35mm)	741F21 x Finish
1-3/4" (44mm) - 2" (51mm)	741F22 x Finish
2-1/4" (57mm)	741F23 x Finish
Over 2-1/4" (57mm)	741F24 x Finish



Inside Indicator



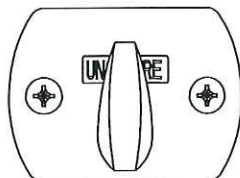
Outside Indicator

Indicators – Non Keyed Functions

- Inside Indicator always reads Secure/Unsecure
- Outside Indicator features slot-turn emergency override
- Compatible with all sectional trim rose designs: A, B, C, D, E, E2, E3, E4, F, G, H, J, T, U, V, W, X, Y

Secure (M19S)	
Door	Packet
1-3/8" (35mm)	721F16 x Finish
1-3/4" (44mm) - 2" (51mm)	721F17 x Finish
2-1/4" (57mm)	721F18 x Finish
Over 2-1/4" (57mm)	721F19 x Finish

Vacant (M19V)	
Door	Packet
1-3/8" (35mm)	720F61 x Finish
1-3/4" (44mm) - 2" (51mm)	720F62 x Finish
2-1/4" (57mm)	720F64 x Finish
Over 2-1/4" (57mm)	720F65 x Finish



Thumbturn Indicator (M19N)

- Located on the inside of the door and reads secure/unsecure
- Built into the occupancy indicator
- Only available in ML2013, ML2017, ML2020, ML2024, ML2029, ML2030, ML2048, ML2060, ML2065, ML2067, ML2068, ML2069 and ML2075 functions

Door	Packet
1-3/8" (35mm)	723F69 x Finish
1-3/4" (44mm) - 2" (51mm)	723F26 x Finish
2-1/4" (57mm)	791F59 x Finish
Over 2-1/4" (57mm)	791F60 x Finish

* Not available with BHSS or BLSS Trim

ML2000.66

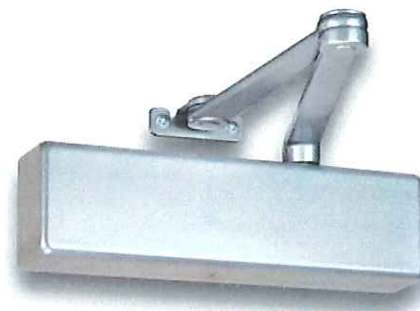
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ASSA ABLOY, the global leader in door opening solutions

45300 4/18

INTRODUCTION

Norton 7570 Series are high security closers designed to withstand maximum abuse, deter tampering and help protect doors, walls and hardware. Available with a large number of arm and track assemblies, the 7570 Series closers are capable of providing a high level of reliable performance for a wide variety of openings. Schools, government buildings, financial institutions, industrial facilities, and prisons and detention centers are ideal applications for this closer.



FEATURES

- » Adjustable spring sizes 1 through 6
- » Security arms – joints feature permanent, orbital riveted elbow and arm shoe/soffit plate joints which prevent disassembly
- » Adjustable backcheck cushioning and positioning
- » Torx drive machine screws with security pin
- » Heavy-duty arms: Regular Rigid, Parallel Rigid, CloserPlus® and CloserPlus Spring™
- » 25-year limited warranty

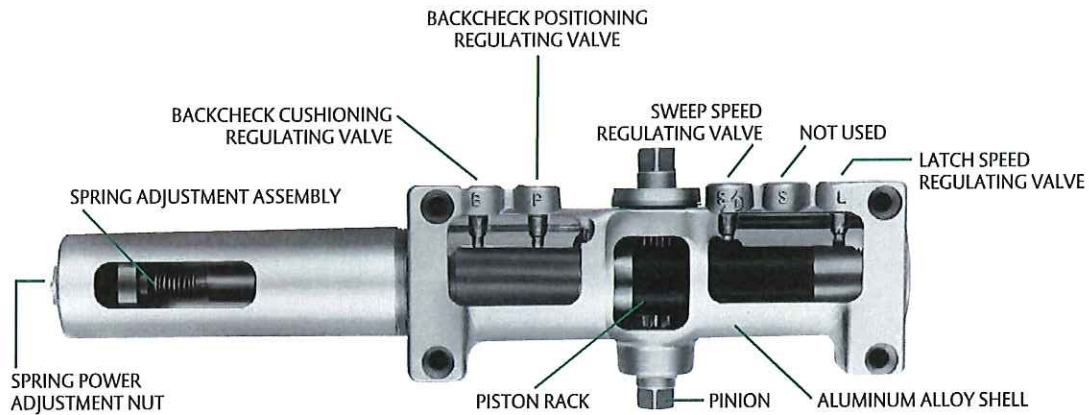
OPTIONAL FEATURES

- » Slide track – push or pull mounting
- » Delayed action
- » Enhanced backcheck

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**EXPLODED VIEW OF CLOSER BODY
(WITHOUT DELAYED ACTION)**



CERTIFICATIONS

- » ANSI/BHMA A156.4, Grade 1 certified 
- » UL / cUL listed for use on fire rated doors 
- » UL10C listed for positive pressure fire test
- » Comply with requirements for the Americans with Disabilities Act (A.D.A) and ANSI standard A117.1 
- » This product is manufactured in an ISO 9001 facility
- » Closers are listed by the New York City Materials and Equipment Acceptance Division

CAUTION: Door Closers for Low Opening Force Applications:

Door closers installed in openings required to meet the requirements of The Americans with Disabilities Act or ANSI/BHMA Standard A117.1, when adjusted to meet those requirements, may not provide adequate closing power to dependably close and latch the door.

EXPLANATION OF FEATURES

Aluminum Alloy Housing

Closer bodies are constructed of a special aluminum alloy, carefully selected to accommodate interactive steel components and operating conditions.

Rack & Pinion Operation

Provides a smooth constant control of the door through its full opening and closing cycle. 180° door swing can be achieved when door, frame, hardware and arm function do not interfere.

Handed

All series 7570 closer covers are handed (closer cover must match hand of door).

Sweep Speed Control Valve

Allows adjustment of door speed from the door's full open position down to approximately 5° from the closed position.

Latch Speed Control Valve

Allows adjustment of door speed from approximately 5° down to the door's fully closed position.

Non-Critical Control Valves

All control valves for sweep speed, latch speed and backcheck cushioning are non-critical and are adjusted by a standard 1/8" (3mm) hex wrench.

Adjustable Backcheck Cushion Valve

Provides control of the door in the opening cycle, beginning at approximately 75° of door opening. It slows/cushions the door opening, when the door is forcibly opened beyond its pre-adjusted limits.

Adjustable Backcheck Position Valve

Allows the door opening position, where backcheck cushioning begins, to be adjusted to a greater door angle, up to a maximum of 20° farther (approximately 95°).

Security Cover

Supplied standard with all series 7570 door closers. This deep drawn steel cover is handed for all applications. The cover is fastened to the closer body at two points on top and to the door closer body stand-offs at two points on the bottom.

Warranty

These closers carry a limited 25-year warranty against defect, and life of the building on the aluminum housing.

Closer Fluid

NorGlide® closer fluid is a specially formulated multi-viscosity hydraulic fluid that contains lubricity and anti-oxidation agents that provide optimum performance and efficiency. This fluid complements the interaction of the door closer's aluminum housing with its steel and brass components, while maintaining stable viscosity to allow the door closer to perform in temperatures ranging from extremely high to as low as -40° F.

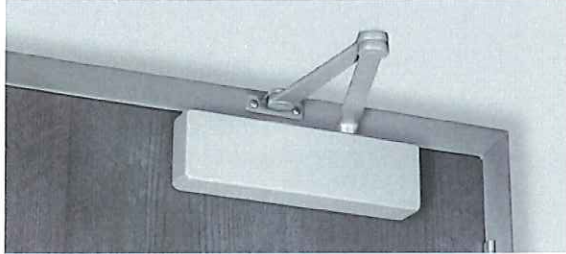
DOOR CLOSER POWER OPTIONS

Series 7570 Multi-Sized Door Closer

Adjustable through the entire power range of door closer sizes 1 through 6, as outlined in ANSI/BHMA standard A156.4. Option PT-4H.

The series 7570 also conforms to the minimum opening force requirements of the Americans with Disabilities Act (A.D.A.) and ANSI/BHMA standard A117.1 for interior doors.

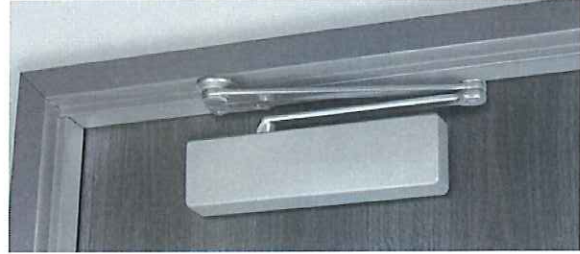
APPLICATIONS



Regular Rigid Arm

This double lever arm features a non-adjustable secondary arm. Orbitally riveted joints prevent tampering or disassembly. The rigid heavy-duty arm is standard with the security closers featuring a regular arm application.

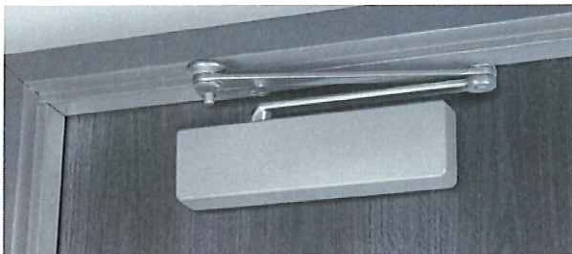
Auxiliary door stop required. Available non-hold open only.



Parallel Rigid Arm

An enhanced variation of the standard parallel arm assembly that is intended for use in heavy traffic areas where auxiliary door stops are installed.

Auxiliary door stop required. Available non-hold open only.

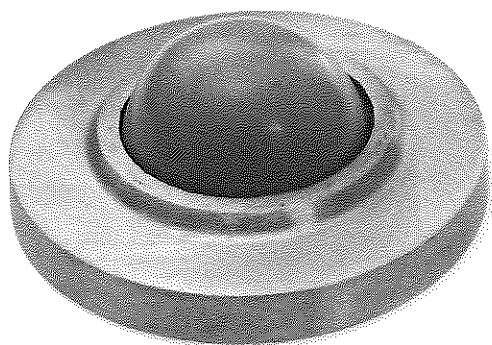


CloserPlus® Arm

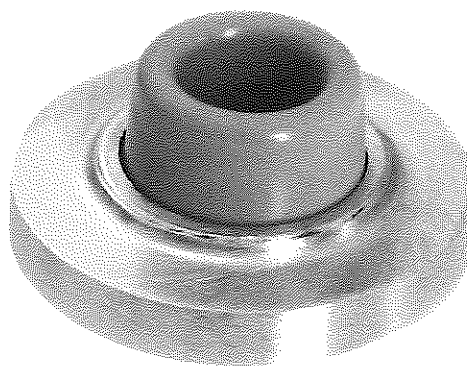
Similar to the Parallel Rigid arm, this arm incorporates a stop at the arm's soffit plate to dead stop the door at a predetermined degree of door swing between 85° and 110°, in 5° increments. Prior to dead stop the door closer's backcheck feature slows the door speed to reduce the impact of the stop action.

CloserPlus arm is intended for use where an auxiliary door stop cannot be utilized and no more than moderate abuse is anticipated. Where more extreme conditions are expected, use of a Unitrol® arm is recommended.

Thumbturn hold open available. (Hold open strength is adjustable.)

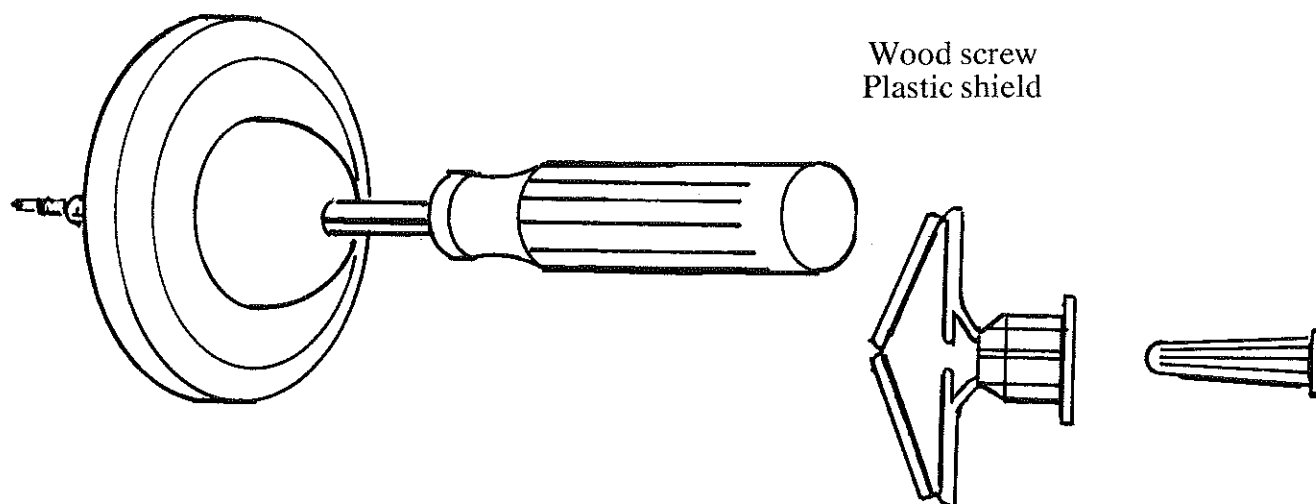


240 Series
2 1/2" Diameter
1" Projection



250 Series
2 1/2" Diameter
1" Projection

Fastenings



Wood screw
Plastic shield

NO.	MATERIAL	FINISHES
240	Wrought Brass	Standard
	Cast Stainless Steel	
250	Wrought Brass	Standard
	Cast Stainless Steel	

INSTITUTIONAL HINGES

204FMSS INSTITUTIONAL HINGES

APPLICATION:

For swinging hollow metal doors. Each hinge features cast stainless steel leaves with integral security stud and non-removable stainless steel pin. Security fasteners are provided with each unit.

TECHNICAL DATA:

- STANDARD FINISH:
Stainless steel - US32D
- SIZE: 4-1/2" x 4-1/2" x 3/16"
- WEIGHT: 1.5 lbs.
- HINGE LEAVES:
Cast stainless steel
- HINGE PIN: Stainless steel
- ASTM F1758 Certified
Impact Test-Grade 1

204FMSS FULL MORTISE HINGE



HINGES

203FS: FULL SURFACE
203FP: FOOD PASS

APPLICATION:

For use on food passes, observation shutters and other small swinging doors where a medium duty hinge is required. Available with solid leaves for welded application or pre-drilled for fasteners. The 203FP is a version of the 203FS with a built-in stop to hold the food pass door in a horizontal position for use as a shelf.

TECHNICAL DATA:

- HINGE LEAVES: Steel
- HINGE PIN: Cold-rolled steel
- SIZE: 3" H x 2-3/4" W x 1/4" TK
- WEIGHT: .9 lb.
- PIN SIZE: 1/2" diameter
- 203FS: No holes standard
- 203FP: Drilled and countersunk for screws standard

203FS FULL SURFACE HINGE



203FP FOOD PASS HINGE



ESCUTCHEON AND CYLINDER SHIELD

218 ESCUTCHEON

218-1 ESCUTCHEON: ONE WAY
218-2 ESCUTCHEON: TWO WAY

APPLICATION:

The 218 Escutcheon is used to provide a close fit between a paracentric cylinder and the keyhole. It also serves to protect the finish around the keyhole from chipping. The one-way escutcheon prevents the key from being extracted from the cylinder while lock is in the unlocked condition. Provided with security fasteners.

TECHNICAL DATA:

- FINISH: US32D
- MATERIAL: Stainless steel,
- SIZE: 3" DIA x .105" TK
- WEIGHT: .2 lb.

219 CYLINDER SHIELD APPLICATION:

The 219 Cylinder Shield mounts over the paracentric cylinder on exterior doors to protect the keyhole from dirt, snow and other foreign elements. Provided with security fasteners.

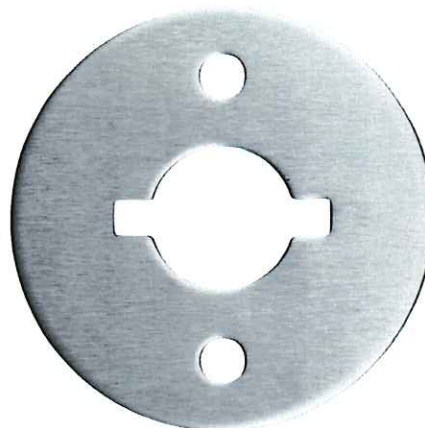
TECHNICAL DATA:

- FINISH: US26D
- MATERIAL: Stainless Steel
- WEIGHT: .5 lb.

219M MOGUL CYLINDER SHIELD

Same as above except shield mounts over the mogul cylinder. US26D finish.

ESCUTCHEON



218-2 shown

CYLINDER SHIELD



219 shown



Key: Prison Paracentric
Door: Swinging
Security Level: Maximum

60/60K Latch and Key Operated Deadlocks

Description

Series 60 Locks are lever tumbler, mechanical locks for swinging doors. Series 60 Locks are key operated only. Series 60K Locks also have a knob set which is active when the lock is not deadlocked. Specify keying as follows:

- 62 Keyed cover side
- 66 Keyed both sides
- 62K Knob model keyed cover side
- 66K Knob model keyed both sides

Applications

Series 60 Locks are ideal for use on corridor, cell, dining room or recreational area doors. Series 60K Locks with knobs are suited for administrative or infirmaries where staff personnel require the convenience of knob operation combined with slam-locking and the security of a deadlock. Specify handing.

Standards Compliance

UL listed as Fire Door Accessory, 3 hour rating with strike. Single or pair of doors with 3 hour rating.

Standard Features

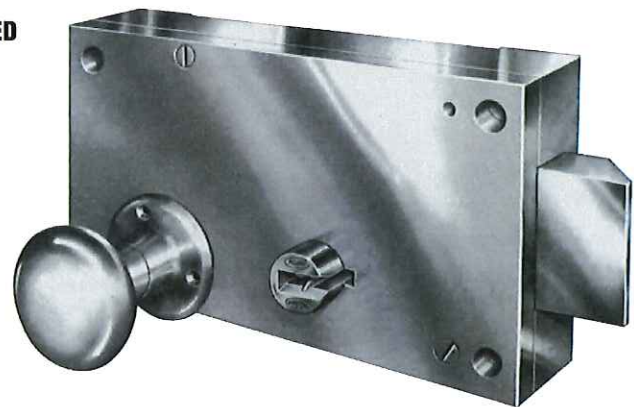
- **Knob operation (Series 60K)** – Knob will operate latchbolt unless deadlocked.
- **Mechanical operation** – Locks and unlocks by key. A half-turn of the key unlocks, and a full turn of the key, in the opposite direction, deadlocks the latchbolt. Key is removable in the deadlocked and latched position.

- **Automatic snap-locking** – Automatically when door is closed.
- **Durable case** – Ductile iron case with 3/8" thick steel cover.
- **Corrosion-resistance** – Working parts are corrosion-resistant.
- **Heavy-duty lever tumblers** – 5 spring-temper brass tumblers, activated by heavy phosphor-bronze springs. Precision fit to locking fence.

- **Large solid latchbolt** – Zinc plated steel, 2" x 3/4" with two hardened steel roller pins to resist sawing. Bolt projects 1/2" when retracted.
- **Bolt throw** – 3/4"
- **Bolt projection** – 1/2" or 1-1/4" are standard. Use 1-1/4" projection for stop side mounting.



60 Series Deadlock
Right hand standard
bevel shown.



Combination Knob



60K Series Deadlock
Right hand standard
bevel shown.

For more information, please call 210.533.1231.



60/60K Latch and Key Operated Deadlocks

(continued from previous page)

Standard Features

- **Investment-cast key cylinder** – One-piece bronze alloy with paracentric keyway.
- **Knobs and roses (Series 60K)** – US26D finish attached to a 3/8" square spindle by exposed set screws on one side, and a concealed cross-pin on the other. Knobs are provided for both sides unless specified otherwise.
- **Finish (Series 60K)** – Trim satin chrome US26D, zinc plated for case/cover.

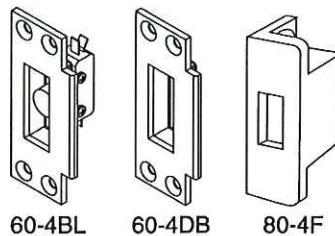
Optional Features

- **Mounting** – Hollow metal, grille or plate.
- **Single knob (60K Series)**
- **Safety knob set (60K Series)** – Specify "SK" for safety knob one side. "Double SK" for safety knob on both sides.

Accessories

(must be specified separately)

- **60-4B** – Mortise strike and mounting screws.
- **60-4BL** – Mortise strike with switch and mounting screws.
- **60-4DB** – Mortise strike with dust box and mounting screws.
- **80-4F** – Surface-mounted keeper and mounting screws.



How To Order

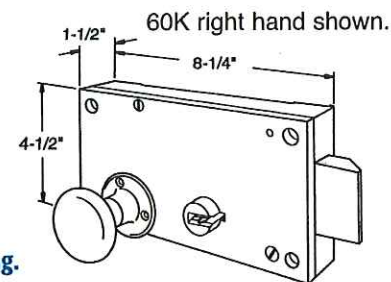
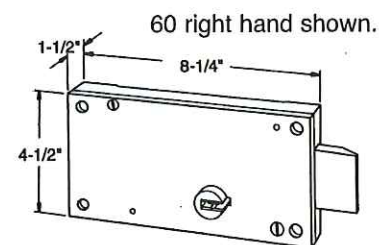
Specify:

- 1) Quantity
- 2) Handing
- 3) Bolt projection

- 4) Location of single knob, hinge side or stop side.
- 5) Mounting required.
- 6) Key code instructions.
- 7) Accessories required.

Dimensional Data

Note: Dimensions are for information and planning purposes only, and should not be used as templates.



Specify circled swing number when ordering.

MOUNTING PLATE HINGE SIDE

KEYED BOTH SIDES	13	RHSB	LHSB	14
KEYED HINGE SIDE	17	RHSB	LHSB	18
KEYED STOP SIDE	21	LHRB	RHRB	22

MOUNTING PLATE STOP SIDE

KEYED BOTH SIDES	15	LHRB	RHRB	16
KEYED STOP SIDE	19	LHRB	RHRB	20
KEYED HINGE SIDE	23	RHSB	LHSB	24

LEGEND



P.O. Box 2021, San Antonio, TX 78297 ■ Ph: 210.533.1231 ■ Fx: 210.533.2211
Web: www.SouthernFolger.com ■ Email: info@southernfolger.com

Key: Prison Paracentric
Door: Swinging
Security Level: Maximum

FOLGER ADAM MECHANICAL LOCKS

80 DEADLOCK



Right hand shown.

Description

Series 80 Deadlocks are lever tumbler, mechanical locks for swinging doors.

- 82 Five tumbler model, keyed cover side
- 82-6 Six tumbler model, keyed cover side
- 86 Five tumbler model, keyed both sides
- 86-6 Six tumbler model, keyed both sides

Applications

Series 80 Deadlocks are designed for use on cell doors, corridor doors, dormitory doors and dayrooms. They are also suited for storage rooms or large control cabinets. Specify handing when ordering.

Standard Features

- **Mechanical operation** – Locks and unlocks by key. For key removal in locked position only, specify a single wing escutcheon on lock mounting or access door.
- **Durable case** – Ductile iron case, 3/8" thick steel cover.
- **Corrosion resistance** – Working parts are corrosion resistant.
- **Heavy-duty lever tumblers** – Spring temper brass activated by heavy phosphor bronze springs. Precision fit to locking fence.

- **Large, solid deadbolt** – Zinc plated steel with three hardened steel roller pins to resist sawing, 2" x 3/4". Projects 1/2" when retracted.
- **Bolt throw** – 3/4"
- **Bolt projection** – 1/2" or 1-1/4" standard.
- **Investment-cast key cylinder** – One-piece, bronze alloy with paracentric keyway.
- **Finish** – Zinc plated for corrosion resistance.

Standards Compliance

ASTM F-1450 Grade 1

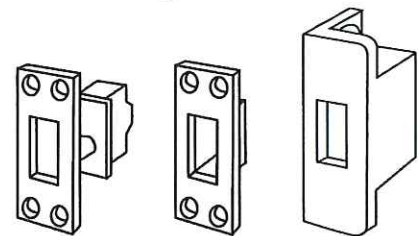
Optional Features

- **High security** – Six-tumbler model offers greater pick resistance.
- **Mounting** – Hollow metal, plate or grille mounting.

Accessories

(must be specified separately)

- **80-4B** – Mortise keeper and mounting screws.
- **80-4BL** – Mortise keeper with switch and mounting screws.
- **80-4DB** – Mortise keeper with dustbox and mounting screws.
- **80-4F** – Surface mounted keeper and mounting screws.



80-4BL

80-4DB

80-4F

For more information, please call 210.533.1231.



80 DEADLOCK

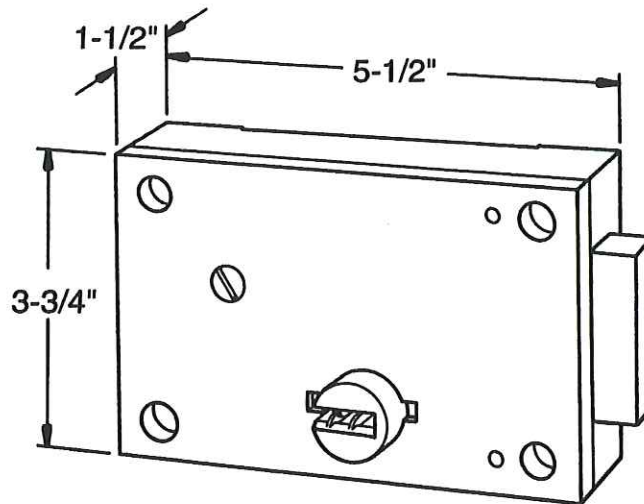
How to Order

Specify:

- 1) Quantity
- 2) Handing
- 3) Bolt projection.
- 4) Mounting required.
- 5) Key code instructions.
- 6) Optional features/accessories required.

Dimensional Data

Note: Dimensions are for information and planning purposes only, and should not be used as templates.



Specify circled swing number when ordering.

MOUNTING PLATE HINGE SIDE

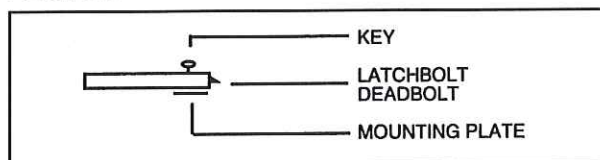
KEYED BOTH SIDES	1 RH			LH	2
KEYED HINGE SIDE	5 RH			LH	6
KEYED STOP SIDE	9 LH			RH	10

MOUNTING PLATE STOP SIDE

KEYED BOTH SIDES	3 LH			RH	4
KEYED STOP SIDE	7 LH			RH	8
KEYED HINGE SIDE	11 RH			LH	12

1-1/4" projection required with stop-side mounting.

LEGEND



P.O. Box 2021, San Antonio, TX 78297 ■ Ph: 210.533.1231 ■ Fx: 210.533.2211
Web: www.SouthernFolger.com ■ Email: info@southernfolger.com

LOCK MOUNTINGS

APPLICATION:

Used for mounting mechanical paracentric locks on hollow metal, steel plate or grating doors. Note: The model number for a specific lock mounting is determined by adding "HM", "P", "G" as a prefix to the lock model number i.e., HM-1080A-1, G-1070A-2.

TECHNICAL DATA:

- **SIZE:** Varies with application
- **WEIGHT:** Varies with application
- **HM - MOUNTING FOR HOLLOW METAL DOORS:** 7 gauge steel plate is attached to door with security fasteners. Comes with 218 Escutcheon. For two-way locks, a second escutcheon is required.
- **P - MOUNTING FOR STEEL PLATE DOORS:** Formed 10 gauge steel plate is attached to door with security fasteners or rivets.
- **G - MOUNTING FOR STEEL GRATING DOORS:** Welds to grating door. 7 gauge steel cover is attached to lock mounting with security fasteners. Comes with 218 Escutcheon. For two-way locks, a second escutcheon is required.

Revised 3/09

LOCK MOUNTINGS



HM – Mounting for Hollow Metal Doors



P – Mounting for Plate Doors



G – Mounting for Grating Doors



FOR MORE INFORMATION, PLEASE CALL 210-533-1231 F17

DOOR PULLS

APPLICATION:

Economical, attractive, general purpose door pulls designed for ease of operation on heavy doors and/or heavy traffic areas. Provided with security fasteners.

TECHNICAL DATA:

- FINISH:
US32D
- MATERIAL:
Stainless Steel
- SIZE:
8-3/4" L x 1-3/4" W x 2" Projection
- WEIGHT: 1.3 lbs.

212C RAISED DOOR PULL



DOOR POSITION SWITCHES FOR SWINGING DOORS

200MRS MAGNETIC SWITCH APPLICATION:

The 200MRS is used where a built-in door indicator switch is desired. This tamper-proof unit is mortised into the door frame. An actuating magnet is recessed into the door edge. Provided with security fasteners.

TECHNICAL DATA:

- SIZE: 4-7/8" L x 1-1/4" W
- WEIGHT: 1 lb.
- ELECTRICAL: 24 volts (AC or DC)

200MRS TB MAGNETIC SWITCH

Triple Bias Switch

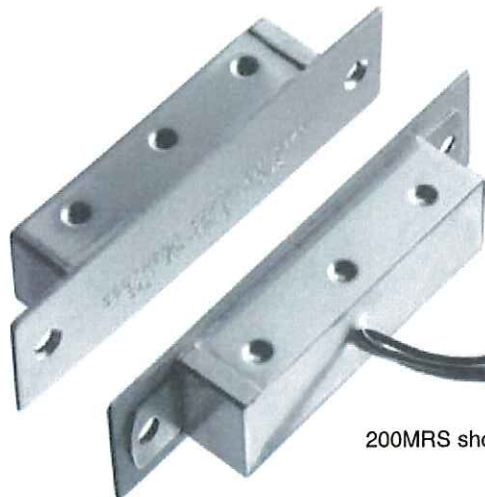
220A DOOR POSITION SWITCH APPLICATION:

The 220A switch actuates a remote lamp indicator or an audible signaling device the moment a swinging door is moved from the fully-closed position. Enclosed in a 10 gauge galvanized steel housing, the 220A is designed for installation on the door frame above the top hinge. A pivoting operator that actuates the switch is attached to the door face with special security screws. The 220A is designed for use on doors with 4-1/2" or 5" hinges. Specify hinge size and type (220A-5, 220A-4, etc.). Provided with security fasteners.

TECHNICAL DATA:

- SIZE: 6-5/16" x 2-1/2" x 1-7/8"
- WEIGHT: 3 lbs.
- ELECTRICAL: Switch rating SPDT 15 amps at 125 VAC or .5 amps at 125 VDC

200MRS MAGNETIC SWITCH



200MRS shown

220A DOOR POSITION SWITCH



KEY CABINETS DOOR STOP

6-60 KEY CABINET

(60 key capacity)

6-300 KEY CABINET

(300 key capacity)

6-720 300 KEY CABINET

(720 key capacity)

SIZE: 16" W x 24" H x 6 5/8" D

WEIGHT: 6-60: 55 LBS.

6-300: 85 LBS.

6-720: 195 LBS.

Key cabinets provide security and control of a large number of paracentric prison keys, or Mogul-type keys. Cabinets may be provided for surface or recessed mounting. Keys are held on two sides of a swinging panel within the enclosure. A printed index is provided for recording the location of each key, and the lock it operates. Available with a Southern Steel 1010A or 1010AM lock.

420 DETENTION DOOR STOP

SIZE: 2" Dia. X 3 1/2" Bumper
5/8-11 X 2 1/2" Post

Material: 90 durometer silicone
rubber body
with threaded steel post

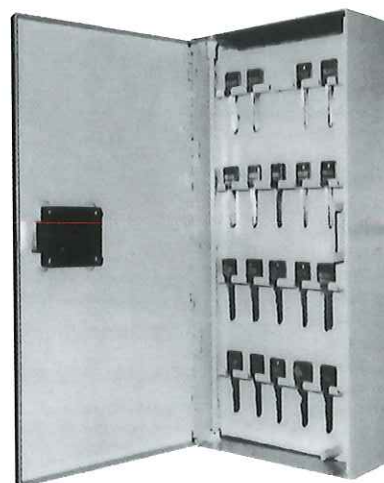
Style: Wall or floor mount

Finish: Black

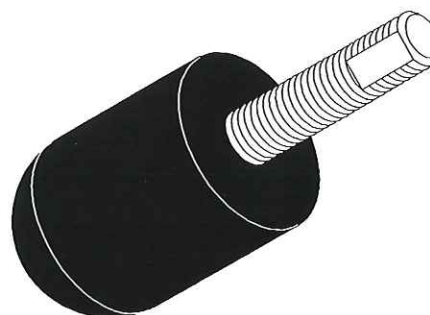
Mounting: Embed in concrete or
masonry

Heavy duty detention-grade door stop for installation in either wall or floor with epoxy resin adhesive. Threaded steel anchor post.

KEY CABINETS



420 DETENTION DOOR STOP



**Southern
Folger**

1 GENERAL

1.01 REFERENCE STANDARDS

- .1 ASTM International
 - .1 ASTM C 542, Standard Specification for Lock-Strip Gaskets.
 - .2 ASTM D 790, Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.
 - .3 ASTM C1036, Standard Specification for Flat Glass.
 - .4 ASTM D 2240, Standard Test Method for Rubber Property - Durometer Hardness.
 - .5 ASTM E 84, Standard Test Method for Surface Burning Characteristics of Building Materials.
 - .6 ASTM E 330, Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
 - .7 ASTM F 1233, Standard Test Method for Security Glazing Materials and Systems.
- .2 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-12.1-2017, Tempered or Laminated Safety Glass.
 - .2 CAN/CGSB-12.2-M91 (R2017), Flat, Clear Sheet Glass.
 - .3 CAN/CGSB-12.3-M91 (R2017), Flat, Clear Float Glass.
 - .4 CAN/CGSB-12.4-M91 (R2017), Heat Absorbing Glass.
- .3 Glass Association of North American (GANA)
 - .1 GANA Glazing Manual - 2008.
 - .2 GANA Laminated Glazing Reference Manual - 2009.

1.02 ADMINISTRATIVE REQUIREMENTS

- .1 Pre-Installation Meetings:
 - .1 Convene pre-installation meeting 1 week prior to beginning work of this Section and on-site installation, with Contractor's Representative and Departmental Representative in accordance with Section 01 31 19 - Project Meetings to:
 - .1 Verify project requirements.
 - .2 Review installation and substrate conditions.
 - .3 Co-ordination with other building subtrades.
 - .4 Review manufacturer's written installation instructions and warranty requirements.
- .2 Arrange for site visit with Departmental Representative prior to start of Work to examine existing site conditions adjacent to demolition Work.
- .3 Hold project meetings every week month.
- .4 Ensure key personnel site supervisor project manager subcontractor representatives attend.

- .5 Departmental Representative will submit written notification of change to meeting schedule established upon contract award 24 hours prior to scheduled meeting.

1.03 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 glass, sealants, and glazing accessories and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Samples:
 - .1 Submit for review and acceptance of each unit.
 - .2 Samples will be returned for inclusion into work.
 - .3 Submit duplicate mm size samples of and sealant material.
- .4 Certificates: submit product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

1.04 CLOSEOUT SUBMITTALS

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

1.05 QUALITY ASSURANCE

- .1 Certificates: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

1.06 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 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 glazing and frames from nicks, scratches, and blemishes.
 - .3 Protect prefinished aluminum surfaces with wrapping strippable coating.
 - .4 Replace defective or damaged materials with new.
- .4 Packaging Waste Management: remove for reuse and return by manufacturer of pallets, crates, padding, and packaging materials in accordance with Section

01 74 19 - Waste Management and Disposal.

1.07 AMBIENT CONDITIONS

- .1 Ambient Requirements:
 - .1 Install glazing when ambient temperature is 10 degrees C minimum. Maintain ventilated environment for 24 hours after application.
 - .2 Maintain minimum ambient temperature before, during and 24 hours after installation of glazing compounds.

2 PRODUCTS

2.01 MATERIALS

- .1 Design Criteria:
 - .1 Ensure continuity of building enclosure vapour and air barrier using glass and glazing materials as follow:
 - .1 Utilize inner light of multiple light sealed units for continuity of air and vapour seal.
 - .2 Size glass to withstand wind loads, dead loads and positive and negative live loads to ASTM E330.
 - .3 Limit glass deflection to 1/200 with full recovery of glazing materials.
- .2 Flat Glass:
 - .1 Safety glass: to CAN/CGSB-12.1, transparent, 6mm thick unless noted otherwise on Drawings.
 - .1 Type 2-tempered.
 - .2 Class B-float.
 - .3 Category 1.
 - .2 Float glass: to CAN/CGSB-12.3, glazing quality, 6mm thick unless noted otherwise on Drawings.
 - .3 Spandrel glass: Tempered spandrel glass conforming with DD-G-1403, Grade B, Style II, colour as indicated on Drawings, 6mm thick unless noted otherwise on Drawings.
 - .4 Clear Wire Glass: clear rolled glass conforming to ASTM C-1036, Type II (flat), Class I, Form 1 (wired and polished both faces), wired with welded polished wires, 13 mm x 13 mm square pattern, 6mm thick unless noted otherwise on Drawings..
 - .5 Low emissivity (LOW E) glass, metallic coating: soft, sputtered, 6mm thick unless noted otherwise on Drawings.
- .3 Safety Glazing: Plastic polycarbonate glazing: to CAN/CGSB-12.1, as follows:
 - .1 Single 6mmmm thick polycarbonate sheet, clear colour.
 - .2 Ballistic performance: to ASTM F 1233.
 - .3 Flexural strength: to ASTM D 790.
 - .4 Surface burning characteristics for flame and smoke spread: to ASTM E 84.

- .4 Insulating Glass Units:
 - .1 Manufacturer and Unit Fabrication: By a member of the Sealed Insulating Glass Manufacturers Assn. (SIGMA) and fabricated in accordance with SIGMA recommendations, except where more stringent requirements are indicated.
 - .2 Class: "CBA" and certified as such by the Insulating Glass Certification Council (IGCC).
 - .3 Construction: organic elastomeric sealed edge (no metal edges permitted) consisting of a polyisobutylene primary seal and a silicone secondary seal, with the interior air space hermetically sealed and provided with a concealed desiccant agent. Secondary seals other than silicone shall not be used.
- .5 Sealant: in accordance with Section 07 92 00.

2.02 ACCESSORIES

- .1 Setting blocks: neoprene or EPDM, 80-90 Shore A durometer hardness to ASTM D2240, size to suit glazing method, glass light weight and area.
- .2 Spacer shims: neoprene, 50-60 Shore A durometer hardness to ASTM D2240, 75 mm long x one half height of glazing stop x thickness to suit application. Self adhesive on one face.
- .3 Glazing tape:
 - .1 Preformed butyl compound with integral resilient tube spacing device, 10-15 Shore A durometer hardness to ASTM D2240; coiled on release paper; black colour.
 - .2 Closed cell polyvinyl chloride foam, coiled on release paper over adhesive on two sides, maximum water absorption by volume 2 %, designed for compression of 25 %, to effect an air and vapour seal.
- .4 Glazing splines: resilient silicone, extruded shape to suit glazing channel retaining slot, colour as selected.
- .5 Glazing clips: manufacturer's standard type.
- .6 Lock-strip gaskets: to ASTM C542.
- .7 Frame: stainless steel complete with security screws.

3 EXECUTION

3.01 EXAMINATION

- .1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for glazing installation in accordance with manufacturer's written instructions.
 - .1 Verify that openings for glazing are correctly sized and within tolerance.
 - .2 Verify that surfaces of glazing channels or recesses are clean, free of obstructions, and ready to receive glazing.
 - .3 Visually inspect substrate in presence of Departmental Representative.
 - .4 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
 - .5 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Departmental Representative.

3.02 PREPARATION

- .1 Clean contact surfaces with solvent and wipe dry.
- .2 Seal porous glazing channels or recesses with substrate compatible primer or sealer.
- .3 Prime surfaces scheduled to receive sealant.

3.03 INSTALLATION: EXTERIOR WET/DRY METHOD (PREFORMED TAPE AND SEALANT)

- .1 Perform work in accordance with GANA Glazing Manual and GANA Laminated Glazing Reference Manual for glazing installation methods.
- .2 Cut glazing tape to length and set against permanent stops, 6 mm below sight line. Seal corners by butting tape and dabbing with sealant.
- .3 Apply heel bead of sealant along intersection of permanent stop with frame ensuring full perimeter seal between glass and frame to complete continuity of air and vapour seal.
- .4 Place setting blocks at 1/4 1/3 points, with edge block maximum 150 mm from corners.
- .5 Rest glazing on setting blocks and push against tape and heel head of sealant with sufficient pressure to attain full contact at perimeter of light or glass unit.
- .6 Install removable stops with spacer strips inserted between glazing and applied stops 6 mm below sight line. Place glazing tape on glazing light or unit with tape flush with 16 mm below sight line.
- .7 Fill gap between glazing and stop with sealant to depth equal to bite of frame on glazing, maximum 9 mm below sight line.

- .8 Apply cap head of sealant along void between stop and glazing, to uniform line, flush with sight line. Tool or wipe sealant surface smooth.

3.04 INSTALLATION: INTERIOR WET/DRY METHOD (TAPE AND SEALANT)

- .1 Perform work in accordance with GANA Glazing Manual and GANA Laminated Glazing Reference Manual for glazing installation methods.
- .2 Cut glazing tape to length and install against permanent stops, projecting 1.6 mm above sight line.
- .3 Place setting blocks at 1/4 1/3 points, with edge block maximum 150 mm from corners.
- .4 Rest glazing on setting blocks and push against tape to ensure full contact at perimeter of light or unit.
- .5 Install removable stops, with spacer shims inserted between glazing and applied stops at 600 mm intervals, 6 mm below sight line.
- .6 Fill gaps between light and applied stop with sealant to depth equal to bite on glazing, to uniform and level line.
- .7 Trim protruding tape edge.

3.05 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
 - .1 Leave Work area clean at end of each day.
 - .1 Remove traces of primer, caulking.
 - .2 Remove glazing materials from finish surfaces.
 - .3 Remove labels.
 - .4 Clean glass and mirrors using approved non-abrasive cleaner in accordance with manufacturer's instructions.
 - .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.

3.06 PROTECTION

- .1 Protect installed products and components from damage during construction.
- .2 After installation, mark each light with an "X" by using removable plastic tape or paste.
 - .1 Do not mark heat absorbing or reflective glass units.
- .3 Repair damage to adjacent materials caused by glazing installation.

END OF SECTION