

SECTION 08711 - DOOR HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Commercial door hardware for the following:
 - a. Swinging doors.
 - b. Other doors to the extent indicated.
 - 2. Cylinders for doors specified in other Sections.
- B. Related Sections include the following:
 - 1. Division 8 Section "Flush Wood Doors" for astragals provided as part of a fire-rated labeled assembly and for door silencers provided as part of the frame.
 - 2. Division 8 Section "Aluminum Framed Entrances and Storefronts" for entrance door hardware, except cylinders.
- C. Products furnished, but not installed, under this Section include the following. Coordinating, purchasing, delivering, and scheduling remain requirements of this Section.
 - 1. Cylinders for locks on aluminum and glass entrance doors.
 - 2. Final replacement cores and keys to be installed by Owner.

1.3 SUBMITTALS

- A. Product Data: Include installation details, material descriptions, dimensions of individual components and profiles, and finishes.
- B. Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.
 - 1. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule."
 - 2. Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening.

- a. Organize door hardware sets in same order as in the Door Hardware Schedule at the end of Part 3.
 3. Content: Include the following information:
 - a. Type, style, function, size, label, hand, and finish of each door hardware item.
 - b. Manufacturer of each item.
 - c. Fastenings and other pertinent information.
 - d. Location of each door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
 - e. Explanation of abbreviations, symbols, and codes contained in schedule.
 - f. Mounting locations for door hardware.
 - g. Door and frame sizes and materials.
 - h. Description of each electrified door hardware function, including location, sequence of operation, and interface with other building control systems.
 - 1) Sequence of Operation: Include description of component functions that occur in the following situations: authorized person wants to enter; authorized person wants to exit; unauthorized person wants to enter; unauthorized person wants to exit.
 4. Submittal Sequence: Submit the final Door Hardware Schedule at earliest possible date, particularly where approval of the Door Hardware Schedule must precede fabrication of other work that is critical in the Project construction schedule. Include Product Data, Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the Door Hardware Schedule.
 5. Submittal Sequence: Submit initial draft of final schedule along with essential Product Data to facilitate the fabrication of other work that is critical in the Project construction schedule. Submit the final Door Hardware Schedule after Samples, Product Data, coordination with Shop Drawings of other work, delivery schedules, and similar information has been completed and accepted.
 - C. Qualification Data: For firms and persons specified in "Quality Assurance" Article.
 1. Include lists of completed projects with project names and addresses of architects and owners, and other information specified.
 - D. Maintenance Data: For each type of door hardware to include in maintenance manuals specified in Division 1.
 - E. Warranties: Special warranties specified in this Section.
- 1.4 QUALITY ASSURANCE
- A. Installer Qualifications: An experienced installer having a minimum of (5) years experience in builders hardware field, competent to interpret plans, specifications and to furnish appropriate and complete.
 - B. Supplier Qualifications: Door hardware supplier with warehousing facilities in Project's vicinity and who is or employs a qualified Architectural Hardware Consultant, available during the course of the Work to consult with Contractor, Architect, and Owner about door hardware and keying.
 1. Scheduling Responsibility: Preparation of door hardware and keying schedules.

- C. Source Limitations: Obtain each type and variety of door hardware from a single manufacturer, unless otherwise indicated.
- D. Regulatory Requirements: Comply with provisions of the following:
 - 1. Where indicated to comply with accessibility requirements, comply with Americans with Disabilities Act (ADA), "Accessibility Guidelines for Buildings and Facilities (ADAAG)," ANSI A117.1, FED-STD-795, "Uniform Federal Accessibility Standards," as follows:
 - a. Handles, Pulls, Latches, Locks, and other Operating Devices: Shape that is easy to grasp with one hand and does not require tight grasping, tight pinching, or twisting of the wrist.
 - b. Door Closers: Comply with the following maximum opening-force requirements indicated:
 - 1) Interior Hinged Doors: 5 lbf (22.2 N) applied perpendicular to door.
 - 2) Fire Doors: Minimum opening force allowable by authorities having jurisdiction.
 - c. Thresholds: Not more than 1/2 inch (13 mm) high. Bevel raised thresholds with a slope of not more than 1:2.
 - 2. NFPA 101: Comply with the following for means of egress doors:
 - a. Latches, Locks, and Exit Devices: Not more than 15 lb (67 N) to release the latch. Locks shall not require the use of a key, tool, or special knowledge for operation.
 - b. Delayed-Egress Locks: Lock releases within 15 seconds after applying a force not more than 15 lb (67 N) for not more than 3 seconds.
 - c. Door Closers: Not more than 30 lbf (133 N) to set door in motion and not more than 15 lbf (67 N) to open door to minimum required width.
 - d. Thresholds: Not more than 1/2 inch (13 mm) high.
- E. Fire-Rated Door Assemblies: Provide door hardware for assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to NFPA 252.
 - 1. Test Pressure: Test at atmospheric pressure.
- F. Keying Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Meetings." Incorporate keying conference decisions into final keying schedule after reviewing door hardware keying system including, but not limited to, the following:
 - 1. Function of building, flow of traffic, purpose of each area, degree of security required, and plans for future expansion.
 - 2. Preliminary key system schematic diagram.
 - 3. Requirements for key control system.
 - 4. Address for delivery of keys.
- G. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Meetings." Review methods and procedures related to electrified door hardware including, but not limited to, the following:

1. Inspect and discuss electrical roughing-in and other preparatory work performed by other trades.
2. Review sequence of operation for each type of electrified door hardware.
3. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
4. Review required testing, inspecting, and certifying procedures.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Inventory door hardware on receipt and provide secure lock-up for door hardware delivered to Project site.
- B. Tag each item or package separately with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.
- C. Deliver keys to manufacturer of key control system.
- D. Deliver keys to Owner by registered mail or overnight package service.

1.6 COORDINATION

- A. Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing door hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.
- B. Electrical System Roughing-in: Coordinate layout and installation of electrified door hardware with connections to security system.

1.7 WARRANTY

- A. General Warranty: Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.
- B. Special Warranty: Written warranty, executed by manufacturer agreeing to repair or replace components of door hardware that fail in materials or workmanship within specified warranty period. Failures include, but are not limited to, the following:
 1. Structural failures including excessive deflection, cracking, or breakage.
 2. Faulty operation of operators and door hardware.
 3. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
- C. Warranty Period: Three years from date of Substantial Completion, unless otherwise indicated.
- D. Warranty Period for Manual Closers: 10 years from date of Substantial Completion.
- E. Warranty Period for Concealed Floor Closers: Five years from date of Substantial Completion.

1.8 MAINTENANCE SERVICE

- A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.
- B. Maintenance Service: Beginning at Substantial Completion, provide six months' full maintenance by skilled employees of door hardware Installer. Include quarterly preventive maintenance, repair or replacement of worn or defective components, lubrication, cleaning, and adjusting as required for proper door hardware operation. Provide parts and supplies as used in the manufacture and installation of original products.

PART 2 - PRODUCTS

HARDWARE FOR LABELED DOORS: ALL HARDWARE FURNISHED IN CONNECTION WITH DOORS BEARING UNDERWRITER'S LABELS OR WHERE NECESSARY TO MEET SPECIAL REQUIREMENTS WILL BE STRICTLY IN ACCORDANCE WITH THE REQUIREMENTS ESTABLISHED BY THE GOVERNING AUTHORITY AND SUBJECT TO THE APPROVAL OF THE AUTHORITY.

SCREWS AND FASTENINGS: HARDWARE FOR HOLLOW METAL DOORS, HOLLOW METAL FRAMES OR ITEMS TO BE ATTACHED TO MASONRY OR TILE FLOORS OR WALLS SHALL BE SUPPLIED WITH THE PROPER MACHINE SCREWS, LEAD SHIELDS, TOGGLE BOLTS OR OTHER APPROVED FASTENING DEVICES AS REQUIRED TO PROVIDE THE BEST MEANS OF APPLICATION.

HARDWARE FOR DOUBLE OPENINGS: WHERE DOOR CLOSERS, PANIC DEVICES, DOOR HOLDERS, PUSH, PULL, KICK OR ARMOR PLATES ARE CALLED FOR AT DOUBLE OPENINGS (PAIRS OF DOORS), IT IS INTENDED THAT SUCH ITEMS OF HARDWARE BE FURNISHED FOR BOTH LEAVES.

SCHEDULES AND SAMPLES: A COMPLETE SCHEDULE OF HARDWARE INDICATING THEREON ALL HANDS OF DOORS, KEYING INFORMATION, FINISHES AND ANY OTHER PERTINENT DATA NECESSARY FOR THE CONVENIENCE OF THE ARCHITECTS SHALL BE SUBMITTED FOR THE ARCHITECT'S CONSIDERATION. SUBMIT SIX (6) COPIES. SAMPLES OF AN ITEM OR ITEMS OF HARDWARE SHALL BE FURNISHED TO THE ARCHITECT UPON HIS/HER REQUEST. A REJECTION OF THE SAMPLES OR OF THE HARDWARE SCHEDULE SHALL CONSTITUTE A REJECTION OF THE HARDWARE SUPPLIER.

STORAGE: THE GENERAL CONTRACTOR SHALL PROVIDE AT THE JOBSITE A SAFE AND DRY PLACE FOR THE STORAGE OF ALL FINISH HARDWARE. STORAGE FACILITIES FOR HARDWARE SHALL BE KEPT LOCKED.

KEYS AND KEYING: **ALL CORES AND CYLINDERS TO BE BEST 6 PIN INTERCHANGABLE TYPE WITH CONSTRUCTION KEYING. GRANDMASTER AND MASTER KEY PER OWNER'S DIRECTIONS.**

FURNISH:

- 10 CONSTRUCTION KEYS**
- 6 GRANDMASTER KEYS**
- 4 CONTROL KEYS**
- 6 MASTER KEYS PER SET**
- 2 KEYS PER LOCKSET OR CYLINDER**
- 1 FACTORY KEY BITTING LIST**

TEMPLATE HARDWARE: ALL ITEMS OF HARDWARE TO BE FASTENED TO METAL OR TO PRE-FINISHED OR PRE-MACHINED DOORS AND/OR FRAMES SHALL BE FURNISHED TO TEMPLATE. TEMPLATES AND APPROVED HARDWARE SCHEDULES SHALL BE FURNISHED TO THE RESPECTIVE DOOR AND FRAME SUPPLIERS BY THE HARDWARE SUPPLIER THRU THE GENERAL CONTRACTOR. THE HARDWARE SUPPLIER SHALL INCLUDE IN HIS SUBMITTED HARDWARE SCHEDULES, PAGES ENTITLED "TEMPLATE INFORMATION" WHICH SHALL INCLUDE A LISTING OF ALL TEMPLATES NECESSARY FOR THE HOLLOW METAL PREPARATION. THIS PAGE SHALL INCLUDE HARDWARE ITEM, MANUFACTURER'S NAME AND STOCK OR CATALOG NUMBER, GAUGE OF METAL IN THE CASE OF BUTT HINGES AND MANUFACTURER'S TEMPLATE OR DRAWING NUMBER. IN THE EVENT HARDWARE PREPARATION IS NECESSARY FOR ALUMINUM DOORS, PLASTIC CLAD DOORS OR PRE-MACHINED DOORS, SEPARATE HARDWARE TEMPLATE PLATES ARE TO BE SUPPLIED FOR EACH OF THESE OTHER FABRICATORS AND SHALL CONTAIN GENERALLY THE INFORMATION LISTED ABOVE AS MIGHT BE PERTINENT TO THE CUT OUT WORK REQUIRED FOR EACH RESPECTIVE FABRICATOR.

HARDWARE LOCATION/DIMENSIONS: DISTANCE FROM FLOOR TO CENTER LINE OF...STORE DOOR THUMB PIECE-39"...DOOR PULL GRIP-42"
...CENTER OF PUSH PLATE-50"...DOOR KNOB-38"...CYLINDER DEADLOCK-52"...PUSH AND PULL BARS (1)-45"...PUSH AND PULL BARS (2)-42"...PUSH AND PULL BARS (3)-45"...HOSPITAL ROLLER LATCHES-38"... HOSPITAL ARM PULLS-47"...PANIC DEVICES-38".

LOCATION OF BUTT HINGES: BOTTOM HINGE FROM THE FINISH FLOOR TO THE BOTTOM OF THE HINGE IS 10"...TOP HINGE FROM HEAD RABBET TO THE TOP OF THE HINGE-5"...CENTER HINGES IS THE EQUAL DISTANCE BETWEEN THE TOP AND THE BOTTOM HINGES.

THESE DIMENSIONS ARE A GENERAL GUIDE IN THE ABSENCE OF OTHER SPECIFICATIONS.

FINISHES: **SATIN CHROMIUM PLATED BMHA 626**

WHERE STAINLESS STEEL FINISH IS CALLED FOR, IT IS INTENDED THAT THE ITEMS BE OF STAINLESS STEEL MATERIAL, NOT ALUMINUM OR OTHER BASE MATERIALS FINISHED TO MATCH STAINLESS STEEL FINISH.

MANUFACTURERS: THE ITEMS OF HARDWARE HEREINAFTER LISTED OR DESCRIBED ARE THE PRODUCTS OF THE FOLLOWING MANUFACTURERS:

BUTT HINGES	<u>HAGER</u>	<u>STANLEY</u>
INTERIOR	BB1279	FBB179
LOCKSETS	<u>SCHLAGE</u>	<u>YALE SECURITY</u>
CLOSETS	D 80PD	5405 LN-IC
OFFICES	D 70-IC	5408 LN-IC
RESTROOM	D 40	5402 LN
PASSAGE	D 10	5401 LN
DOOR CLOSERS	<u>LCN</u>	<u>YALE SECURITY</u>
INTERIOR DOORS	1371 SERIES	3501 SERIES

*NOTE: ALL DOOR CLOSERS TO COMPLY WITH ADA REQUIREMENTS.
ALL DOORS WITH DOOR CLOSERS TO HAVE KICK PLATES
8" TALL X 2" LDW X US32D (STAINLESS STEEL)

WEATHERSTRIPPING,

SMOKE SEAL	<u>PEMKO</u>	<u>HAGER</u>
THRESHOLD	2005AV	520S
WEATHERSTRIPPING	316AV	890S
ASTRAGAL	305CN	872S
SMOKE SEAL	305CR	870S

FLATGOODS

	<u>ROCKWOOD</u>	<u>HAGER</u>
KICK PLATES	10" TALL .05 X 32D	190S 10" TALL X 32D
WALL BUMPERS	410 X 32D	236 X 32D
FLOOR STOPS	440 X 26D	241F X 26D
FLUSH BOLTS	555	282D
AUTO. FLUSHBOLTS	1845 OR 1945	293D OR 294D
COORDINATOR	1672 SERIES	297D
PUSH PLATES	70C 4 X 16 X 32D	30S 4 X 16 X 32D
PULL BAR	BF158 X 32D	23Q X 32D
DOOR SILENCERS	608 GREY	307D GREY

MISCELLANEOUS

	<u>PRECISION</u>	<u>ROCKWOOD</u>
DOOR GUARD	1625	321

UNLESS **WRITTEN** APPROVAL IS OBTAINED FROM THE ARCHITECTS TEN (10) DAYS PRIOR TO THE BID OPENING, ALL ITEMS OF HARDWARE WILL BE AS SPECIFIED WITH NO SUBSTITUTIONS.

WALL BUMPERS/DOOR STOPS: PROVIDE **#410** WHERE AN ITEM OF HARDWARE, OR A DOOR, MAY CONTACT ANY PART OF THE BUILDING STRUCTURE. WHERE THE USE OF A WALL BUMPER IS IMPRACTICAL, A FLOOR OR WALL TYPE STOP **#440** SHALL BE PROVIDED. ALL DOORS WHICH SWING LESS THAN 135 DEGREES AND ARE EQUIPPED WITH DOOR CLOSERS SHALL BE PROVIDED WITH THE PROPER TYPE OF STOP OR BUMPER.

ROLLER BUMPERS: PROVIDE **#455 OR 456** AS REQUIRED WHERE ONE DOOR MAY CONTACT ANOTHER.

DOOR MUTES: PROVIDE THREE (3) FOR EACH SINGLE OPENING AND FOUR (4) FOR EACH DOUBLE OPENING.

FLUSH BOLTS/DUST PROOF STRIKES: PROVIDE FOR THE TOP AND BOTTOM OF THE INACTIVE LEAF OF EACH PAIR OF DOORS SPECIFIED TO HAVE A DEADLOCK, LOCKSET OR LATCHSET ON THE ACTIVE LEAF, FLUSH BOLTS **#555** . BOTTOM ROD TO BE 12" LONG AND TOP ROD TO BE SUFFICIENT LENGTH TO LOCATE CENTER OF TOP ROD LEVER APPROXIMATELY 7' FROM THE FINISHED FLOOR. WHERE USED ON DOUBLE ACTING DOORS, PROVIDE BOLTS WITH CONVEX FACES. PROVIDE DUST PROOF STRIKE **#571** FOR THE BOTTOM BOLTS.

AUTOMATIC FLUSH BOLTS: PROVIDE **#1845 OR 1945** FOR ALL PAIRS OF "A", "B", OR "C" LABEL DOORS NOT SPECIFIED TO HAVE PANIC DEVICES. PROVIDE DUST PROOF STRIKE **#571** FOR THE BOTTOM BOLTS.

DOOR HARDWARE

CO-ORDINATORS: PROVIDE #1600 FOR ALL PAIRS OF "A", "B" OR "C" LABEL DOORS.

ASTRAGALS: PROVIDE #305CR X THRU BOLTS FOR ALL PAIRS OF "A", "B" OR "C" LABEL DOORS.

KICK PLATES: PROVIDE KICK PLATES FOR THE PUSH SIDE OF ALL DOORS SPECIFIED TO HAVE DOOR CLOSERS AND/OR DOOR HOLDERS. ALL KICK PLATES ARE TO BE 8" HIGH AND SHALL EXTEND THE WIDTH OF THE DOOR LESS 2". ALL KICK PLATES TO BE 16 GAUGE.

ARMOR PLATES: ALL ARMOR PLATES SHALL BE 40" HIGH AND SHALL EXTEND THE WIDTH OF THE DOOR LESS 2". ALL ARMOR PLATES ARE TO BE 16 GAUGE. PROVIDE ARMOR PLATES FOR THE PUSH SIDE OF THE DOOR.

BUTT HINGES: PROVIDE ONE (1) PAIR OF BUTTS FOR ALL DOORS UP TO 5' HIGH; ALL DOORS OVER 5' HIGH AND UP TO 7' HIGH ARE TO HAVE ONE AND ONE HALF (1 1/2) PAIRS OF BUTTS; ALL DOORS OVER 7' HIGH AND ALL DUTCH DOORS ARE TO HAVE TWO (2) PAIRS OF BUTTS.

BUTTS FOR 1 3/4" THICK DOORS UP TO 36" WIDE SHALL HAVE A PIN HEIGHT OF 4 1/2"; DOORS OVER 36" WIDE SHALL AND UP TO 40" WIDE SHALL HAVE A PIN HEIGHT OF 5". ALL DOORS OVER 40" WIDE SHALL HAVE BUTTS WITH A PIN HEIGHT OF 6". THE WIDTH OF THE BUTTS SHALL BE DETERMINED BY THE TRIM CONDITIONS AFFECTING THE THROW.

DOOR CLOSERS: ALL DOOR CLOSERS SHALL BE THE PRODUCT OF ONE MANUFACTURER THROUGHOUT FOR BOTH INTERIOR AND EXTERIOR DOORS. ALL DOOR CLOSERS TO HAVE NON-FERROUS COVERS MINIMUM .050-2" MAXIMUM PROJECTION. ARMS TO BE FORGED STEEL. CLOSERS TO HAVE SEPARATE VALVE ADJUSTMENT FROM BACKCHECK, CLOSING CYCLE AND LATCHING CYCLE. CLOSERS FOR ALL DOORS TO HAVE ADJUSTABLE SPRING TO INCREASE SPRING POWER 50% PLUS REVERSIBLE FOOT TO BOOST LATCHING POWER.

DOOR CLOSERS TO BE AVAILABLE IN SIZES TWO THRU SIX. IT SHALL BE THE HARDWARE SUPPLIER'S RESPONSIBILITY TO FURNISH DOOR CLOSERS SIZED TO COMPLY WITH THE MANUFACTURERS RECOMMENDATIONS FOR THE INDIVIDUAL DOOR SIZES AND LOCATIONS.

DOOR CLOSERS SHALL BE PROVIDED WITH SUITABLE BRACKETS, ADAPTER PLATES, DOOR PLATES AND FILLER BLOCKS FOR THE OUTSWINGING EXTERIOR DOORS AND SPECIAL CONDITIONS.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.

- B. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Steel Doors and Frames: Comply with DHI A115 series.
 - 1. Surface-Applied Door Hardware: Drill and tap doors and frames according to SDI 107.
- B. Wood Doors: Comply with DHI A115-W series.

3.3 INSTALLATION

- A. Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically indicated or required to comply with governing regulations:
 - 1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
 - 2. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."
- B. Install each door hardware item to comply with manufacturer's written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 9 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.
 - 1. Set units level, plumb, and true to line and location. Adjust and reinforce attachment substrates as necessary for proper installation and operation.
 - 2. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.
- C. Key Control System: Place keys on markers and hooks in key control system cabinet, as determined by final keying schedule.
- D. Boxed Power Supplies: Locate power supplies as indicated or, if not indicated, above accessible ceilings. Verify location with Architect.
 - 1. Configuration: Provide one power supply and all necessary electrical accessories needed to operate electrified strike at door #2.
- E. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 7 Section "Joint Sealants."

3.4 FIELD QUALITY CONTROL

- A. Independent Architectural Hardware Consultant: Owner will engage a qualified independent Architectural Hardware Consultant to perform inspections and to prepare inspection reports.
 - 1. Independent Architectural Hardware Consultant will inspect door hardware and state in each report whether installed work complies with or deviates from requirements, including whether door hardware is properly installed and adjusted.

3.5 ADJUSTING

- A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.
 - 1. Spring Hinges: Adjust to achieve positive latching when door is allowed to close freely from an open position of 30 degrees.
 - 2. Electric Strikes: Adjust horizontal and vertical alignment of keeper to properly engage lock bolt.
 - 3. Door Closers: Adjust sweep period so that, from an open position of 70 degrees, the door will take at least 3 seconds to move to a point **3 inches (75 mm)** from the latch, measured to the leading edge of the door.

3.6 CLEANING AND PROTECTION

- A. Clean adjacent surfaces soiled by door hardware installation.
- B. Clean operating items as necessary to restore proper function and finish.
- C. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of Substantial Completion.

3.7 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain door hardware and door hardware finishes.

3.8 DOOR HARDWARE SCHEDULE

HARDWARE SETS

H.W. SET # 1

DR. # 2		RHR
1 1/2 PR. HINGES	BB1279 4 1/2 X 4 1/2 US26D	HAGER
1 CLOSER	1371-PA-AL-SNI	LCN
1 ELECTRIC STRIKE	7140 X FAIL SECURE X 628	ADAMS RITE
1 COMBINATION LOCK	L1021B X IC (BEST) 26D	ILCO
1 KICKPLATE	8" X 34" US32D	ROCKWOOD
1 WALL STOP	403 US26D	ROCKWOOD

DOOR HARDWARE

H.W. SET # 2

DR. # 4		LHR
DR. # 6		RHR
1 1/2 PR. HINGES	BB1279 4 1/2 X 4 1/2 US26D	HAGER
1 CLASSROOM	D80PD-RHODES-US26D-IC (BEST)	SCHLAGE
1 I.C. CORE	TO MATCH EXISTING	BEST
1 WALL STOP	403 US26D	ROCKWOOD

H.W. SET # 3

DR. # 5		RHRA
3 PR. HINGES	BB1279 4 1/2 X 4 1/2 US26D	HAGER
1 STORAGE	BD80PD-RHODES-US26D-IC (BEST)	SCHLAGE
1 I.C. CORE	TO MATCH EXISTING	BEST
1 PR KICKPLATE	555 X 12" X US26D	ROCKWOOD

H.W. SET # 4

DR. # 7		LHR
DR. # 8		RH
DR. # 9		LH
1 1/2 PR. HINGES	BB1279 4 1/2 X 4 1/2 US26D	HAGER
1 COMBO LOCK	L1021B X IC (BEST) 26D	ILCO
1 I.C. CORE	TO MATCH EXISTING	BEST
1 CLOSER	1371-PA-AL-SNI	LCN
1 KICKPLATE	8" X 34" X 32D	ROCKWOOD

H.W. SET # 5

DR. # 10		LH
1 1/2 PR. HINGES	BB1279 4 1/2 X 4 1/2 US26D	HAGER
1 PASSAGE	D10S-RHODES-US26D	SCHLAGE
1 CLOSURE	1371-PA-AL-SNI	LCN
2 WALL STOPS	403 US26D	ROCKWOOD

END OF SECTION 08711