

SECTION 8C

HARDWARE; BUILDERS' (GENERAL PURPOSE)

1. APPLICABLE PUBLICATIONS: The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

American National Standards Institute (ANSI) Standards:

A156.1-1981	Butts and Hinges
A156.2-1976	Locks and Lock Trim
A156.3-1978	Exit Devices
A156.4-1980	Door Controls - Closers
A156.5-1978	Auxiliary Locks and Associated Products
A156.6-1979	Architectural Door Trim
A156.7-1981	Template Hinge Dimensions
A156.8-1974	Door Controls--Overhead Holders
A156.16-1981	Auxiliary Hardware

Builders Hardware Manufacturers Association (BHMA) Standards:

Directory of Certified Locks & Latches (Eff thru June 1983)

1301-1981	Materials & Finishes
-----------	----------------------

Door and Hardware Institute (DHI) Publications:

Keying - Procedures, Systems and Nomenclature (Jan 1978)

Recommended Locations for Builders' Hardware for Standard Steel Doors and Frames (1975)

The Installation of Commercial Steel Doors and Steel Frames, Insulated Steel Doors in Wood Frames, and Builders Hardware (1977)

National Fire Protection Association (NFPA) Publications:

No. 80-1981 Fire Doors and Windows

No. 101-1981 Code for Safety to Life from Fire in Buildings and Structures

2. TEMPLATES or other information shall be furnished to enable the door and frame manufacturer to provide for the specified hardware. Where two or more articles of hardware are to be mounted on the same door, proper

coordination shall be effected between the manufacturers of the different articles. Templates of hinges shall conform to ANSI A156.7.

3. SUBMITTALS:

3.1 Certificates of Compliance: Certificates of compliance attesting that hardware items conform to the ANSI or BHMA standards under which the items are specified shall be submitted in accordance with the SPECIAL PROVISIONS. A statement that the proposed locks and latches appear in the BHMA Directory of Certified Locks & Latches may be submitted in lieu of certificates.

3.2 Hardware Schedule: Hardware schedule shall list all of the materials to be furnished and shall be submitted for approval. The schedule shall include for each item; the quantities, manufacturer's catalog numbers, hinge and door closer sizes, detail information and location and hardware set identification, corresponding ANSI or BHMA standard type or function number to manufacturer's catalog number, and list of abbreviations and template numbers.

4. PACKAGING, MARKING, AND LABELING: Hardware shall be delivered to the project site in the manufacturer's original packages. Each article of hardware shall be individually packaged in the manufacturer's standard commercial carton or container, properly marked or labeled so as to be readily identifiable with the approved hardware schedule. Each change-key shall be tagged or otherwise identified with the door for which its cylinder is intended. Where double cylinder functions are used or where it is not obvious which is the key side of a door, appropriate instructions shall be included with the lock and on the hardware schedule.

5. FINISHES: Unless otherwise specified, finishes shall conform to those identified under BHMA 1301. Where painting of primed surfaces is required, painting is specified in SECTION: PAINTING, GENERAL.

5.1 Hinges: Hinges shall have the following finishes:

- a. Interior door hinges and inswinging exterior door hinges: 600.
- b. Outswinging exterior door hinges: 626.

5.2 Lock and Door Trim: Lock and door trim shall have finish 626.

5.3 Door Closer: Door closer finishes shall be 600.

6. FASTENINGS of proper type, size, quantity, and finish shall be supplied with each article of hardware. Machine screws and expansion shields shall be used for attaching hardware to concrete, stone, or other masonry. Fastenings exposed to the weather in the finished work shall be of brass, bronze, or stainless steel, as applicable. Screws for the jamb leaf of half-mortise and full-surface hinges attached to structural steel frames shall be the one-way type or other approved tamperproof type.

7. KEYING: Contractor shall provide construction cylinders/cores upon completion of the project. The keys shall be turned over to the Contracting Officer properly tagged and designated as to location.

Cylinder locks: 2 change keys each lock.

The keys shall be furnished to the Contracting Officer arranged for key control system storage in sets or subsets as scheduled.

8. HARDWARE FOR FIRE DOORS shall conform to the requirements of NFPA Nos. 80 and 101.

9. LOCKS AND LATCHES: To the maximum extent possible, locksets and latchsets shall be the products of a single manufacturer. Mortise-type locks and latches for doors 1-3/4 inches thick and over shall have adjustable bevel fronts or otherwise conform to the shape of the door. Mortise locks shall have armored fronts. Trim for mortise locks and latches shall be sectional, with wrought knob and cast shank, and shall conform to the requirements for wrought trim in accordance with ANSI A156.2. Manufacturers' standard plain design shall be used.

9.1 Cylinder Locks: Cylinders shall have seven pins with paracentric keyway. Cylinders and the locks in which they are used shall be the product of the same manufacturer. Cylinders shall be provided with removable type single-key cores.

9.2 Locksets and Latchsets: Locksets and latchsets shall conform to ANSI A156.2, series 1000, Grade 2.

10. DOOR TRIM shall conform to ANSI A156.6.

10.1 Kick Plates: Kick plates shall be Category J100, stainless steel. Width of plates shall be 2 inches less than door width for single doors and 1 inch less for pairs of doors. Height shall be 10 inches except where the bottom rail is less than 10 inches, the plate shall extend to within 1/2-inch of the panel mold or glass bead. Edges of metal plates shall be beveled.

10.2 Push Plates: Push plates shall be Category J300, stainless steel, size 3 inches by 24 inches. Edges of metal plates shall be beveled.

10.3 Sectional Door Pulls for Metal Doors: Sectional door pulls for metal doors shall be Category J400 brass, thru-bolted type of plain modern design.

11. EXIT DEVICES AND EXIT DEVICE ACCESSORIES shall conform to ANSI A156.3.

11.1 Exit Devices: Exit devices shall be of the type indicated in paragraph HARDWARE SETS.

12. DOOR CONTROLS - OVERHEAD HOLDERS shall conform to ANSI A156.8, type specified in paragraph HARDWARE SETS.

13. AUXILIARY HARDWARE, consisting of door holders and door stops, of the types specified in paragraph HARDWARE SETS, shall conform to ANSI A156.16. Lever extension flush bolts shall be Type L14081 and shall be installed at the top and bottom of the inactive leaf of pairs of doors and shall be

mortised in the lock edge of the door. Dust proof strikes shall be Type L04011.

14. HINGES: Hinges shall conform to ANSI A156.1. Hinges used on metal doors and frames shall also conform to ANSI A156.7. Except for hinge sizes specified in paragraph HARDWARE SETS, hinge sizes shall conform to the hinge manufacturer's printed recommendations and shall be indicated on the hardware schedule.

14.1 Contractors Option: Hinges with anti-friction bearings may be furnished in lieu of ball bearing hinges. Fire door hinges shall be in accordance with NFPA No. 80.

15. DOOR CLOSING DEVICES of the following types shall conform to ANSI A156.4:

15.1 Surface Type Closers: Surface type closers shall be Series C02000 with options PT-4A and PT-4D. Mounting details for the type closers specified shall be in accordance with paragraph HARDWARE SETS. Size requirements shall conform to the manufacturer's published recommendations and shall be shown on the hardware schedule. Closers for outswinging exterior doors shall have parallel arms or shall be top jamb mounted. Closers for interior doors close to a wall shall be of narrow projection so as not to strike the wall at the 90 degree open position or shall have parallel arms.

16. MISCELLANEOUS:

16.1 Key Control Storage System: Key control storage system shall conform to ANSI A156.5, Type E8332, capacity 125, and shall be properly labeled for key identification, and located as directed by the Contracting Officer.

16.2 Metal Thresholds: Thresholds for exterior metal doors with weatherstripping shall be extruded aluminum or bronze, flat type with fluted top and shall provide proper clearance and an effective seal with specified weatherstripping. Latching thresholds shall conform to ANSI A156.3, Type 26, and of such height that the bottom of the door shall be 1/8 inch over the tread of the threshold and 1/8 inch below the top of the stop.

17. APPLICATION: Hardware shall be located on doors in accordance with DHI publication, Recommended Locations for Builders' Hardware for Standard Steel Doors and Frames. When approved, slight variations in locations or dimensions will be permitted. Application shall be in accordance with DHI publication, The Installation of Commercial Steel Doors and Steel Framing, Insulated Steel Doors in Wood Frames and Builders' Hardware. Door control devices for exterior doors such as closers and

17.1 Hardware for Labeled Fire Doors: Hardware for labeled fire doors shall be installed in accordance with the requirements of NFPA Nos. 80 and 101.

17.2 Door-Closing Devices: Door-closing devices shall be installed and adjusted in accordance with the templates and printed instructions supplied

by the manufacturer of the devices. Insofar as practicable, doors opening to or from halls and corridors shall have the closer mounted on the room side of the door.

17.3 Key Control Storage Systems: Key control storage system shall be installed where directed.

17.4 Kick Plates: Kick plates shall be installed on the push side of single-acting doors.

18. HARDWARE SETS shall be as follows:

	Hardware Furnished by Door Manufacturer	
	1-1/2 pr.	Hinges, A2112
	1 ea.	Exit device, Type 2, Function 01
	1 ea.	Overhead holder, C08511
	4 pr.	Hinges, A2112
	1 ea.	Exit device, Type 2, Function 08 (active leaf)
	1 ea.	Closer, C02022 (active leaf)
	2 ea.	Flush bolts, 14082 (inactive leaf)
	1 ea.	Door stop, L02343 (inactive leaf)
	1 ea.	Overhead holder, C08511
HW-3		Not Used
	1-1/2 pr.	Hinges, A8112
HW-4	1 ea.	Sectional door pull
	1 ea.	Pushplate
	1 ea.	Closer, C02022
	1 ea.	Kickplate
	1 ea.	Door stop, L02253
	4 pr.	Hinges, A8112
HW-5	1 ea.	High security hasp, style 3-1
	2 ea.	Flush bolts, L84161
	2 ea.	Overhead holder, C08511
	1 ea.	Dust-proof strike, L14011
	1-1/2 pr.	Hinges, A8112
	1 ea.	Lockset, F05
	1 ea.	Closer, C02022
	3 pr.	Hinges, A8133
HW-7	1 ea.	Lockset, Type F05
	2 ea.	Door stop, L02253
	1 pr.	Flush bolts, L14081

HW-8	1-1/2 pr.	Hinges, A8133
	1 ea.	Lockset, Type F05
	1 ea.	Door stop, L02253
HW-9	3 pr.	Hinges, A8112
	1 ea.	Exit device, Type 2, Function 08
	1 ea.	Closer, C02022
	1 ea.	Overhead holder, C08511
HW-10	1-1/2 pr.	Hinges, A2112
	1 ea.	Exit device, Type 2, Function 08
	1 ea.	Closer, C02022
	1 ea.	Overhead holder, C08511