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USACE / NAVFAC / AFCEC **UFGS-08 71 63 (August 2024)**

Preparing Activity: NAVFAC **Superseding**
UFGS-08 71 63 (April 2006)

UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated July 2025
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SECTION 08 71 63

DETENTION HARDWARE
08/24

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NOTE: This guide specification covers the requirements for detention hardware for use in brigs and detention facilities.

Adhere to UFC 1-300-02 Unified Facilities Guide Specifications (UFGS) Format Standard when editing this guide specification or preparing new project specification sections. Edit this guide specification for project specific requirements by adding, deleting, or revising text. For bracketed items, choose applicable item(s) or insert appropriate information.

Remove information and requirements not required in respective project, whether or not brackets are present.

Comments, suggestions and recommended changes for this guide specification are welcome and should be submitted as a Criteria Change Request (CCR).
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PART 1 GENERAL

1.1 REFERENCES

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NOTE: This paragraph is used to list the publications cited in the text of the guide specification. The publications are referred to in the text by basic designation only and listed in this paragraph by organization, designation, date, and title.

Use the Reference Wizard's Check Reference feature when you add a Reference Identifier (RID) outside of the Section's Reference Article to automatically place the reference in the Reference Article. Also use the Reference Wizard's Check Reference feature

to update the issue dates.

References not used in the text will automatically be deleted from this section of the project specification when you choose to reconcile references in the publish print process.

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The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

BUILDERS HARDWARE MANUFACTURERS ASSOCIATION (BHMA)

ANSI/BHMA A156.1	(2021) Butts and Hinges
ANSI/BHMA A156.4	(2024) Door Controls - Closers
ANSI/BHMA A156.5	(2020) Cylinder and Input Devices for Locks
ANSI/BHMA A156.6	(2021) Architectural Door Trim
ANSI/BHMA A156.7	(2022) Template Hinge Dimensions
ANSI/BHMA A156.8	(2021) Door Controls - Overhead Stops and Holders
ANSI/BHMA A156.16	(2023) Auxiliary Hardware
ANSI/BHMA A156.18	(2020) Materials and Finishes

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 70	(2023; ERTA 1 2024; TIA 24-1; TIA 25-2) National Electrical Code
NFPA 72	(2025; TIA 25-4) National Fire Alarm and Signaling Code
NFPA 80	(2025) Standard for Fire Doors and Other Opening Protectives
NFPA 101	(2024) Life Safety Code
NFPA 252	(2022) Standard Methods of Fire Tests of Door Assemblies

UL SOLUTIONS (UL)

UL 10B	(2008; Reprint Oct 2024) Fire Tests of Door Assemblies
UL 14C	(2006; Reprint Oct 2021) UL Standard for Safety Swinging Hardware for Standard Tin-Clad Fire Doors Mounted Singly and in Pairs
UL 437	(2013; Reprint Jan 2022) UL Standard for Safety Key Locks

UL 634	(2007; Reprint Mar 2015) Connectors and Switches for Use with Burglar-Alarm Systems
UL 1034	(2011; Reprint Jun 2020) Burglary-Resistant Electric Locking Mechanisms

1.2 SUBMITTALS

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NOTE: Review Submittal Description (SD) definitions in Section 01 33 00 SUBMITTAL PROCEDURES and edit the following list, and corresponding submittal items in the text, to reflect only the submittals required for the project. The Guide Specification technical editors have classified those items that require Government approval, due to their complexity or criticality, with a "G." Generally, other submittal items can be reviewed by the Contractor's Quality Control System. Only add a "G" to an item if the submittal is sufficiently important or complex in context of the project.

For Army projects, fill in the empty brackets following the "G" classification with a code of up to three characters to indicate the approving authority. Codes for Army projects using the Resident Management System (RMS) are: "AE" for Architect-Engineer; "DO" for District Office (Engineering Division or other organization in the District Office); "AO" for Area Office; "RO" for Resident Office; and "PO" for Project Office. Codes following the "G" typically are not used for Navy and Air Force projects.

The "S" classification indicates submittals required as proof of compliance for sustainability Guiding Principles Validation or Third Party Certification and as described in Section 01 33 00 SUBMITTAL PROCEDURES.

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Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are for Contractor Quality Control approval. Submittals not having a "G" or "S" classification are for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Manufacturer's Detail Drawings; G, [_____]

Verification of Existing Conditions; G, [_____]

Detention Hardware Schedule; G, [_____]

Detention Keying System; G, [_____]

SD-03 Product Data

Hardware Items; G, [_____]

SD-08 Manufacturer's Instructions

Installation; G, [_____]

SD-10 Operation and Maintenance Data

Detention Locks, Data Package 5; G, [_____]

Door Closers, Data Package 5; G, [_____]

Door Position Switches, Data Package 5; G, [_____]

1.3 SHOP DRAWINGS

Submit manufacturer's detail drawings indicating all hardware assembly components and interface with adjacent construction.[Indicate power components and wiring coordination for electrified hardware.] Base shop drawings on verified field measurements and include verification of existing conditions.

1.4 DETENTION HARDWARE SCHEDULE

Provide Hardware Item List and Hardware Schedule containing the following information, and additional information as needed to identify the complete make up of each hardware set and its application to each opening:

1.4.1 Hardware Item List:

a. Hardware Type

b. Item Number

c. Quantity

d. Size(s)

e. Reference Publication / Type Number

f. Manufacturer's Name / Catalog Number

g. Key Control Symbols

h. UL Mark (If fire rated and listed)

i. BHMA Finish(es)

j. Remarks

1.4.2 Hardware Schedule

a. Hardware Set Number

b. Opening Number(s)

c. Opening Description (single/double leaf, hand, size, door/frame material)

d. Fire Rating

e. Sound Rating

f. Hardware Items

g. Quantity

h. Size

i. BHMA Finish

j. Remarks

In addition, submit hardware schedule data package 1 in accordance with Section 01 78 23 OPERATION AND MAINTENANCE DATA.

1.5 QUALITY CONTROL

1.5.1 Qualifications of Installer

Installation is to be completed by a detention equipment installer approved by the detention hardware manufacturer.

1.5.2 Regulatory Requirements

a. Electrically controlled, monitored, and operated detention hardware and related components are to meet requirements of NFPA 70.

b. Detention hardware for labeled fire doors are to meet requirements of UL 10B and be listed (labeled).

c. Detention hardware for doors that are considered "Means of Egress" are to meet requirements of NFPA 101.

d. Electrically operated detention locks are to meet requirements of UL 1034 and be listed (labeled).

1.5.3 Schedule Requirements

Submit detention hardware schedule at the same time hardware samples are submitted. Include quantities, manufacturer's catalog numbers, descriptive information, location, sizes, finish, key control symbols including keying systems for each piece in the detention hardware schedule.

1.5.4 Hardware Coordination Conference

Conduct a hardware coordination conference for hardware prior to submittals for the purpose of coordinating the interface of materials that are furnished by the participants listed. Require that a representative of the entity responsible for each of the following functions attend the conference. Notify participants a minimum of five working days before the conference.

a. Contractor

b. Detention hollow metal supplier and installer

c. Detention hardware supplier and installer

d. Locking control system supplier and installer

e. Electrical contractor

f. Contracting Officer

1.6 DELIVERY, STORAGE, AND HANDLING

1.6.1 Keys

Send to the Contracting Officer directly from the manufacturer via registered mail.

1.6.2 Detention Hardware

Deliver in a timely manner and store in accordance with the manufacturer's recommendations. Mark each individual container with item number as shown on detention hardware schedule. Deliver in manufacturer's original container and protect from damage by weather.

1.7 MAINTENANCE TOOLS

Furnish six tool holders and bits for each different size and type of screw and fastener.

1.8 TEMPLATES

Furnish templates for door and frame preparation.

PART 2 PRODUCTS

2.1 TEMPLATE HARDWARE

Make hardware to be applied to frames and doors to template.

2.2 HARDWARE ITEMS

2.2.1 Keys and Cylinders

ANSI/BHMA A156.5.

2.2.1.1 Mogul Keys

Provide keys for pin tumbler locks not less than 73 mm 2-7/8 inches in length, blade 14 mm 9/16 inch wide by 3.2 mm 1/8 inch thick. Provide handle that is 25 mm 1 inch in diameter. Stamp each key with number or letter per keyset.

2.2.1.2 Mogul Cylinder

Provide a special "Mogul" cylinder twice the diameter of a commercial mortise lock cylinder with internal parts proportionately larger. Special "Mogul" keys and restricted keying are required. The sale of cut keys and blanks are to be factory regulated to control usage and reproduction. The

design is to be wear and pick resistant and include a minimum of five stainless steel 4 mm 5/32 inch diameter pin tumblers, stainless steel springs, and stainless steel ball bearings that intermesh with the key and pin tumblers. Cylinder to conform to UL 437.

2.2.1.3 Builders Cylinder

Type E09211A. Keys are for restricted use. Cylinder to conform to UL 437.

2.2.2 Detention Keying System

Keying system to consist of dissimilar combinations[for each building] with external doors keyed alike; internal corridor doors keyed alike; utility spaces,[wickets, and food passes] keyed alike; each group of cells[or dormitory group] keyed alike but different from other groups. Establish two separate detention key systems; one system for the security Mogul type hardware, and one for the paracentric key system.

2.2.3 Detention Hinges

Hinges to conform to ANSI/BHMA A156.1 and ANSI/BHMA A156.7. Type A8191 HT with stainless steel maximum security pin. Type A8192 HT with stainless steel maximum security pin. The 225 mm 9 inches denotes four wire continuous conduction. Screws are to be twist-off or spanner head. Sizing to conform to the standard. Drilled and counter-sunk hinges are to be provided for proper size machine screws. Use zinc coated hinges on exterior doors with a prime coat. Provide junction box and mortar shield. Electric hinges to conform to UL 634 and be labeled.

2.2.4 Detention Locks

Provide ligature resistant door trim on interior of all locks where door trim is specified below.

2.2.4.1 Type 1 Lock

Electro-mechanical solenoid operation lock; jamb mounted for use with security hollow metal doors with the following features:

a. Solenoid operated 115 V ac continuous duty.

b. Cylinder operated one or two sides using mogul or builders cylinders.

c. Lock case 10 gauge minimum galvanized cold-rolled steel.

d. Latch Bolt 20 mm 3/4 inch throw stainless steel.

e. Bronze or stainless steel face plate.

f. Signal switch for latch bolt and deadlocking bolt.

g. Strike and mounting screws.

h. Push button in frame if on a cell door.

2.2.4.2 Type 2 Lock

Mechanical deadlock; lever tumbler deadlock for use with security hollow metal doors with the following features:

a. Paracentric key operated one or two sides.

b. Six lever tumblers with spring temper brass/bronze springs.

c. Steel or stainless steel deadbolt with saw resistant insets.

d. Bolt 20 by 50 mm 3/4 by 2 inches with 20 mm 3/4 inch throw.

e. Lock case primed for paint or galvanized.

f. Lock mount plate including escutcheon, mounting screws, and strike.

2.2.4.3 Type 3 Lock

Electro-mechanical deadlocking latchlock to conform to UL 10B; jamb mounted in 50 mm 2 inch face security hollow metal frame with the following features:

a. Solenoid operated 24 V dc continuous duty.

b. Cylinder operated one or two side using builders cylinder.

c. Structural and working parts stainless steel.

d. Deadlatch 20 mm 3/4 inch throw stainless steel with saw resistant insets.

e. Stainless steel deadlocking bolt, base plate, and strike.

f. Signal switch for lock status.

g. Plug connectors for conductors.

2.2.4.4 Type 4 Lock

Mortise lock for security hollow metal swinging doors with the following features:

a. Mogul cylinder key operated one or two sides.

b. Cast brass, bronze, or stainless steel bolts. 25 mm One inch throw with saw resistant inserts. Knob operated deadbolt.

c. Armored front adjustable 3 in 50 mm 1/8 in 2 inches.

d. Strike and mounting screws.

e. Snap locks automatically when door is closed.

2.2.4.5 Type 5 Lock

Mechanical deadlocking latch lock for security hollow metal swinging doors with the following features:

a. Mogul key operated one or two sides.

b. Five lever tumbler with spring temper brass/bronze springs.

c. Steel or stainless steel latchbolt.

d. Lock case primed for paint or galvanized.

e. Lock mounting plate including escutcheon mounting screws and strike.

2.2.4.6 Type 6 Lock

Mechanical deadlock for use on security hollow metal doors with the following features.

a. Mogul key operated one or two sides.

b. Five lever tumblers with spring tempered brass/bronze screws.

c. Malleable iron case and cover.

d. Bronze deadbolt 20 by 38 by 16 mm 3/4 by 1-1/2 by 5/8 inch throw.

e. Lock case and cover primed for paint.

f. Lock mounting plate including escutcheon, mounting screws and strike.

2.2.4.7 Type 7 Lock

Mechanical spring lock for use on chase and access doors with the following features.

a. Mogul key operated one side only.

b. Five lever tumblers with spring temper brass/bronze springs.

c. Malleable iron case and cover.

d. Bolt retracted by key 25 by 12.7 mm with 11 mm 1 by 1/2 inch with 7/16 inch throw.

e. Lock case and cover primed for paint.

f. Mounting screws and strike.

2.2.5 Door Closers

2.2.5.1 Type 1 Door Closers

Surface mounted door closer to conform to test requirements of ANSI/BHMA A156.4, PT 1, Grade 1.

a. C02011: Regular Arm Type

b. C02021: Parallel Arm Type

2.2.5.2 Type 2 Door Closers

Concealed overhead closer to conform to ANSI/BHMA A156.4 PT6 Grade 2.

C05032:a. Concealed Arm and Track - Butt hinge hung

Closers to be installed in a 100 mm 4 inch head section.

2.2.6 Strikes

Mortised strikes are to be compatible with the lock the mortised strike serves. Provide dust box and switch to monitor lock bolt where indicated in set numbers.

2.2.7 Door Trim

Provide ligature resistant pulls on interior of all doors.

2.2.7.1 Loop Type Pulls

Manganese bronze or stainless steel 200 mm 8 inches center-to-center surface mounted with spanner type screws. Loop type pulls to conform to ANSI/BHMA A156.6 J401.

2.2.7.2 Flush Type Pulls

Manganese bronze or stainless steel set for one side or back to back mounting with spanner type screws. Flush type pulls to conform to ANSI/BHMA A156.6 J403.

2.2.7.3 Door Stops and Holders

2.2.7.3.1 Type PH1

Type PH1 to conform to ANSI/BHMA A156.8 C01511, hold-open overheard door holder and stop. Provide spanner heads for exposed screws.

2.2.7.3.2 Type PH2

Type PH2 to conform to ANSI/BHMA A156.8 C02511, overhead surface mounted slide type; attached with hex nut and bolt assemblies. Provide spanner heads for exposed screws.

2.2.7.3.3 Type OH3

Type OH3 to conform to ANSI/BHMA A156.8 C08511, overhead surface mounted rod type, attached with hex nut and bolt assemblies. Provide spanner heads for exposed screws.

2.2.7.3.4 Type FS1

Type FS1 to conform to ANSI/BHMA A156.16 L02131, cast door stop. Bronze.

2.2.7.3.5 Type FS2

Type FS2 to conform to ANSI/BHMA A156.16 L01371, offset door stop with hold open. Bronze.

2.2.7.3.6 Type FS3

Type FS3 to conform to ANSI/BHMA A156.16 L02141-L02161, dome door stop. Bronze. Exposed screw is to be spanner head.

2.2.8 Deadbolts (Head and Foot Bolt)

Surface mounted and 25 mm 1 inch diameter with 20 mm 3/4 inch throw. Bolt

is operated by spanner key case, is malleable iron, or steel with cover. Provide attachment with spanner head screws.

2.2.9 Door Position Switches

2.2.9.1 Type 1 Door Position Switch

Mechanically mortised door position switch with the following features:

a. Components concealed when door is in closed position.

b. Switch mechanism housing mortises into door frame headers.

c. Galvanized steel actuator arm.

d. Actuator arm track mortises into the top rail of the door.

e. Allows door opening 180 degrees.

f. Switch monitors door position within 20 mm 3/4 inch from the leading edge of the door to the door stop.

g. Unit constructed of brass and plated steel. The exposed face plate galvanized steel.

h. Switch single pole, double throw type with a rating of 5 amps at 125/250 V ac.

i. Color coded wires with a pair of cable connectors.

2.2.9.2 Type 2 Door Position Switch

A magnetic door position switch for meeting requirements for UL 634 for mounting in head of door to indicate closed door position. Provide the following features:

a. Mortised into door frame header.

b. Potted components.

c. Life expectancy in accordance with manufacturer - over one million operations.

d. Maximum contact rating:

(1) Current, resistive load - 1 amp.

(2) Power, resistive load - 24 V ac.

e. Maximum current at 24 V ac, resistive load - 1 amp.

2.2.10 Security Door Accessories

2.2.10.1 Wall Bumpers

Wall bumpers to conform to ANSI/BHMA A156.16 Type L02101, wall mounted convex door stop.

2.2.10.2 Thresholds

Aluminum extrusion minimum thickness 4.4 by 125 mm 0.172 by 5 inches wide by 12 mm 1/2 inch rise with panic stop and vinyl or neoprene insert.

2.2.10.3 Drip Strip

Extruded galvanized steel strip 64 mm 2-1/2 inches wide with 16 mm 5/8 inch back strip. Attach to shower doors with a continuous weld.

2.2.10.4 Weatherstrip

Apply for head and jambs, pressure sensitive adhesive silicone rubber seal.

2.2.11 Screws and Fasteners

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NOTE: There are several types of "tamper-resistant" fasteners and screws which provide different levels of security. Specify fasteners which will provide the level of security required. Consult detention hardware manufacturers.
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Comply with detention manufacturer's standard fastening hardware and recommendations for size, type, and material.

2.2.11.1 Fabrication

Finish exposed fasteners to match hardware fastened. Fabricate fasteners of the same metal as hardware fastened, except use plated brass or stainless steel for fastening aluminum.

2.2.11.2 Location

Provide spanner head screws and fasteners for exposed hardware.

2.3 FINISHES

Finish surfaces, painted surfaces and painted items to conform to ANSI/BHMA A156.18 and as follows:

2.3.1 Painted Surfaces

BHMA 600 finish (primed for painting).

2.3.2 Finish Surfaces

BHMA 626 finish (satin chromium plated) or BHMA 630 finish (satin stainless steel).

2.3.3 Painted Items

BHMA 689 finish (aluminum painted).

PART 3 EXECUTION

3.1 EXAMINATION

Examine doors, frames, and hardware for damage, defects, and suitability for intended use. Inspect components and adjacent areas of construction for conditions that could be detrimental to the proper operation or performance of the detention hardware.

3.2 INSTALLATION

Provide hardware in accordance with manufacturers' printed installation instructions. Fasten hardware to wood surfaces with full-threaded wood screws or sheet metal screws. Provide machine screws set in expansion shields for fastening hardware to solid concrete and masonry surfaces. Provide toggle bolts where required for fastening to hollow core construction. Provide through bolts where necessary for satisfactory installation.

3.2.1 Weatherstripping Installation

Provide full contact, weathertight seals that allow operation of doors without binding the weatherstripping.

3.2.1.1 Stop Applied Weatherstripping

Fasten in place with color matched sheet metal screws not more than 225 mm 9 inches on center after doors and frames have been finish painted.

3.2.1.2 Interlocking Type Weatherstripping

Provide interlocking, self-adjusting type on heads and jambs and flexible hook type at sills. Nail weatherstripping to door 25 mm 1 inch on center and to heads and jambs at 100 mm 4 inches on center.

3.2.1.3 Spring Tension Type Weatherstripping

Provide spring tension type on heads and jambs. Provide bronze nails with bronze. Provide stainless steel nails with stainless steel. Space nails not more than 38 mm 1-1/2 inch on center.

3.2.2 [Lightproofing][and][Soundproofing] Installation

Provide as specified for stop applied weatherstripping.

3.2.3 Threshold Installation

Extend thresholds the full width of the opening and notch end for jamb stops. Set thresholds in a full bed of sealant and anchor to floor with cadmium-plated, countersunk, steel screws[in expansion sleeves]. For aluminum thresholds placed on top of concrete surfaces, coat the underside surfaces that are in contact with the concrete with fluid applied waterproofing as a separation measure prior to placement.

3.3 ADJUSTMENT AND CLEANING

Examine hardware for complete and proper installation. Lubricate bearing surfaces of moving parts. Adjust hinges, locks, and keepers to function properly. Test keys for smooth operation and for conformance to approved

keying system. Ensure hardware operates freely without binding and is properly aligned. Protect hardware from paint, stains, weather, and other damage until acceptance of the work.

3.4 FIRE DOORS AND EXIT DOORS

Provide hardware that conforms to NFPA 72 for door alarms, NFPA 80 for fire doors, NFPA 101 for exit doors, and NFPA 252 for fire tests of door assemblies.[Provide tin-clad fire doors that conform to UL 14C.]

3.5 FIELD QUALITY CONTROL

After installation, protect hardware from paint, stains, blemishes, and other damage until acceptance of work. Submit notice of testing 15 days before scheduled, so that testing can be witnessed by the Contracting Officer. Adjust hinges, locks, latches, bolts, holders, closers, and other items to operate properly. Demonstrate that permanent keys operate respective locks, and give keys to the Contracting Officer. Correct, repair, and finish, errors in cutting and fitting and damage to adjoining work.

3.6 TRAINING

Upon completion of the work and at a time designated by the Contracting Officer, a manufacturer's technical service representative or manufacturer's authorized representative for the locking control system, is to instruct Government personnel in the proper operation, troubleshooting, maintenance, safety, and emergency procedures of the system. The period of instruction is four, 8-hour sessions. Conduct training at the job site. The Government has the option to video tape training sessions. Notify the Contracting Officer at least two weeks in advance.

-- End of Section --