

ANSI/BHMA A156.11-2024

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**STANDARD
FOR
CABINET LOCKS**



**SPONSOR
BUILDERS HARDWARE MANUFACTURERS ASSOCIATION, INC.**

**AMERICAN NATIONAL STANDARDS INSTITUTE
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AMERICAN NATIONAL STANDARD

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FOREWORD (Not a part of ANSI/BHMA A156.11)

The general classification of builders hardware includes a wide variety of items that are divided into several categories. To recognize this diversity, a sectional classification system has been established. Cabinet Locks is one such section and this Standard is the result of the collective efforts of members of the Builders Hardware Manufacturers Association, Inc. who manufacture these products. The total Product Standards effort is, therefore, a collection of sections, each covering a specific category of items.

Performance tests and, where it has been necessary, dimensional requirements have been established for each cabinet lock product category. There are no restrictions on design except for those dimensional requirements imposed for this reason.

A cabinet lock cannot provide security by itself. To enhance security and reduce risk, consult a qualified locksmith or physical security professional.

The BHMA recognizes that errors will be found, items will become obsolete, and new products, methods and materials will be developed. With this in mind, the Association plans to update, correct and revise these Standards on a regular basis.

The BHMA numbers which indicate types of hardware do not identify size, finish, or design and are not intended to be used without necessary supplementary information. Users of this Standard who require a specific design for a product type should describe it using generic terms or the manufacturer's name and description desired.

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1. SCOPE

1.1 This standard establishes requirements for locks used on cabinets. These enclosures are accessed via doors or drawers. Cycle tests, operational tests, and strength tests are included.

1.2 Tests described in this Standard are performed under laboratory conditions. In actual usage, results vary because of the material used in the installation, maintenance, and environmental conditions.

1.3 Tests to evaluate decorative and protective finishes for these products are described in ANSI/BHMA A156.18 for Materials and Finishes and are required to complete certification.

1.4 **Grade Qualifications** Two classifications of tests are described in this Standard, Operational and Security. Manufacturers shall indicate the Grade level. A Grade 1 product shall meet all Grade 1 criteria, a Grade 2 product shall meet all Grade 2 criteria, and a Grade 3 product shall meet all Grade 3 criteria in each classification.

2. DEFINITIONS

2.1 Bolts

2.1.1 **Dead Bolt** A lock component having an end which protrudes from, or is withdrawn into, the lock front by action of the lock mechanism. When the door or drawer is closed and the dead bolt is thrown, it extends into a hole provided in the strike or if no strike is used, behind the frame, thus locking the door or drawer. It does not retract with end pressure.

2.1.2 **Extension Bolt** A type of dead bolt which projects laterally after entering the strike and interlocks with the strike.

2.1.3 **Hook Bolt** A type of dead bolt which after entering the strike expands and interlocks with the strike.

2.1.4 **Latch Bolt** A lock component having a beveled end which projects from the lock front in its extended position, is forced back into the lock case by end pressure or drawn back by action of the lock mechanism. When the door or drawer is closed, the latch bolt projects into a hole provided in the strike or if no strike is used, behind the frame, thus holding the door or drawer in the closed position.

2.1.5 **Strike Bolt/Pin** – The stationary component that engages with the latch mechanism. It is typically circular in shape, and occasionally a U-shape is employed to permit additional flexibility in mounting. It is also referred to as a (strike) pin.

2.2 **Cabinet** An enclosure that provides physical protection for equipment, valuable assets, and sensitive information. Authorized users have an input device that permits access via swinging or sliding doors, and drawers.

2.3 **Case** The housing of a lock.

2.4 **Credential** A key, keycard, electronic key fob, PIN (personal identification number), biometric attribute, or other device, used in contact or proximity of the input device to transfer a code required for unlocking the locking device, or communicating with it for other access control purposes.

2.5 **Cycle** In this Standard, the projection and retraction of a bolt or the rotation of a cam to the locked and unlocked position.

2.6 **Cylinder** The subassembly of a lock containing a plug with a keyway and a body with movable detainers.

- 2.7 **Cylinder Plug** A component of the cylinder within the body, which is actuated when the correct key is used.
- 2.8 **Deadlocking (deadlocked)** When the bolt cannot be retracted by end pressure (force applied to the end of the bolt) once it has fully extended and engaged with the strike or behind the frame.
- 2.9 **Electrified Input Devices** The electrified locks equivalent to a cylinder for reading a credential and transmitting the “key code” to the controlling device. Examples include card readers, keypads, contact memory key readers, radio frequency (proximity) readers, optical readers, and biometric readers.
- 2.10 **Input Devices** Electrified input devices and push button mechanism.
- 2.11 **Interchangeable Core** A cylinder that is removed from the lock with a designated key or other means which does not require disassembly of the lock.
- 2.12 **Key** A properly combined device specifically intended to operate a corresponding cylinder.
- 2.13 **Keyway** The slot or hole in a cylinder plug within which a key is fully inserted to operate the cylinder.
- 2.14 **Locked** Refers to the state of the cabinet door or drawer when the locking mechanism has been activated.
- 2.15 **Movable Detainer** Part of the mechanism of the cylinder which first should be moved by the key into a predetermined position before the key or plug can release. Examples include components known as pins, side bars, discs, and the like.
- 2.16 **Strike** A mortised or surface mounted plate fastened to the door frame into which the bolts project.
- 2.17 **Strike Box** A housing used in back of a strike to enclose the bolt or bolt openings.
- 2.18 **Turn** The component that projects or retracts a dead bolt or latch bolt by turning. Sometimes called a turn piece or thumb turn.

3. GENERAL

- 3.1 The provisions of this Standard evaluate cabinet locks as a component and do not take into consideration the variety of applications and all possible methods of physical attack.
- 3.2 Tests shall be made using standard production cabinet locks and the installation shall follow the manufacturer’s instructions and preparation requirements. Lubrication shall not be applied at any time during the tests.
- 3.3 Failure of any one cabinet lock in any of the tests shall constitute a failure of the complete qualification tests.
- 3.4 The test fixture or panel shall allow for the correct installation and operation of the product as specified by the manufacturer.
- 3.5 Failure of the test fixture does not constitute a pass or failure of the tests. After corrective action is taken on the test fixture, a resubmittal of a new sample of the same design shall be made for retesting.
- 3.6 Where a cabinet lock function or design does not allow a specific test, the test is not required.
- 3.7 For applications where pick resistance and other higher security protections are required users should consider locks meeting ANSI/UL 437 or ANSI/BHMA A156.30 for High Security Cylinders.
- 3.8 Measuring Equipment All instruments and equipment used to conduct tests for recording data need to

be calibrated and maintained for effectiveness and continued accuracy. Calibration of equipment shall be traceable to the National Institute of Standards and Technology (NIST). The frequency of calibration depends on the recommendation of the particular test equipment manufacturer with a minimum being once per year. Measuring equipment used shall have a known measurement error and be capable of qualifying the value being measured.

3.9 Test Cylinders and Input Devices The test cylinder or input device used with the cabinet lock shall meet the performance requirements specified for the appropriate product type and grade level. If the cabinet lock has an integral cylinder or input device, it shall be evaluated as a single unit according to this standard. If the lock is provided without a cylinder (as a separate component), a cylinder that meets the necessary performance requirements shall be used for qualification testing.

3.10 Values Required values in this Standard are given in US units. The SI (metric) equivalents are approximate. All values that do not carry specific tolerances or are not marked maximum or minimum shall have the following tolerances: Linear dimensions shall be $\pm 1/16$ in (1.6 mm). Pounds or pound force shall be $\pm 2\%$. Degrees opening shall be ± 2 degrees.

3.11 Reference to other Standards ANSI Standards are available at www.buildershardware.com or from the American National Standards Institute, www.ansi.org. ASTM Standards are available at <https://www.astm.org/>.

4. TYPES (SEE SECTION 9)

4.1 Cam Locks Cam locks are installed in drawer fronts and in cabinet doors through a mounting cutout (bore) from the outside or inside and secured from the inside with a nut, a spring clip, screws, or by other means. Cams are rotated by turning a key. Cams are positioned at any position within 360 degrees and can be rotated 90 degrees, 180 degrees, or other rotations as specified in manufacturers' catalogs. Cams shall be straight, offset, hook, or of other similar configurations.

4.2 Chest Locks Chest locks are installed from the inside of the door frame of the cabinet, inserting the cylinder or barrel into a cutout (bore) in the door or frame. The surface of the cylinder is flush or protrudes slightly above the outer surface. Surface mounted cases attach to the inner surface of the door and half mortise locks are partially mortised into the back. Cases are attached to doors or frames with screws or other methods standard with the manufacturer.

4.3 Cabinet Door or Drawer Locks Drawer or cabinet door locks are installed from inside of the drawer or door, inserting the cylinder or barrel into a cutout (bore) in the drawer front or door. The surface of the cylinder is flush or slightly above the outer surface. Surface mounted cases attach to the inner surface of the drawer front or door and half mortise lock cases are partially mortised into the back. Cases are attached to drawers and doors with screws or other methods standard with the manufacturer. Insertable bolt locks are installed in drawer fronts or doors into a cutout (bore) from the outside and secured from the inside with a nut, a spring clip, or by other means.

4.4 File Cabinet Locks File cabinet locks are installed from the inside of the cabinet located in the cabinet framework into a cutout (bore). When locked, the surface of the cylinder is flush with or slightly protruding from the frame surface. Locks are secured within the cabinet by attachment to the latch mechanism.

4.5 Lever and Tee (T-) Handle Locks Levers and Tee Handles are installed in cabinet doors from the outside through a cutout (bore) and secured from inside. A cam on the inside is rotated by turning the lever or tee handle except when locked by a key from outside. As specified in manufacturers' catalogs, cams are positioned at any position within 360 degrees and are rotated to a stop at 90 degrees, 180 degrees, or other rotations and in a clockwise or counterclockwise rotation to lock. Some manufacturers provide for 1, 2, or 3

point locking using top rods, bottom rods, and guides furnished by the manufacturers or others.

4.6 Locker Locks Locker locks are surface mounted on the interior of the door with the cylinder located in a cutout (bore). The lock is secured to the door with screws and nuts or with other fasteners.

4.7 Sliding Door Locks Sliding door locks are installed in sliding cabinet doors (wood or metal) through a cutout (bore) and secured from the inside by means of screws. Strikes, either cup, flat, or interlocking design, are furnished as required. See manufacturers' catalogs.

4.8 Showcase or Sliding Glass Door Locks Attached by means of a ratchet or strap strike.

5. DIMENSIONAL CHARACTERISTICS

Typical dimensional attributes are provided below by product type. Refer to the product specifications of each individual manufacturer for detailed information.

5.1 Door, Drawer or Frame Thickness Cabinet Locks are available to fit nominal thicknesses of 1/8 in (3 mm) to 1 3/8 in (35 mm) depending on lock types.

5.2 Tumbler Types All cabinet lock cylinders are available with movable retainers. In addition, Chest, Door, Drawer, Locker and Sliding Door lock cylinders are available with lever tumblers.

5.3 Cutout (Bore) Diameters

5.3.1 Cam Lock - 3/4 in (19 mm) and 1 5/32 in (29 mm) - flat on one or both sides.

5.3.2 Chest Lock - 1/2 in (13 mm) to 1 3/8 in (35 mm).

5.3.3 Cabinet Door and Drawer Lock - 7/8 in (22 mm), 1 1/8 in (28 mm), or 1 3/8 in (35 mm).

5.3.4 File Lock - 13/16 in (21 mm) x 17/32 in (13.5 mm), and 1 1/8 in (28 mm) x 3/4 in (19 mm).

5.3.5 Lever and Tee Handle - 1/2 in (13 mm), 5/8 in (16 mm), 3/4 in (19 mm), 13/16 in (21 mm), and 15/16 in (24 mm).

5.3.6 Locker - 1/2 in (13 mm) to 1 1/8 in (28 mm).

5.3.7 Sliding - 7/8 in (22 mm) to 1 3/16 in (30 mm) or other contour.

6. Bolt Projection Requirements (See Table 1)

TABLE 1

Minimum Dead Bolt Projection Requirements			
Product Type	Grade 1	Grade 2	Grade 3
Chest Locks*	3/4 in. (19 mm)	5/16 in. (7.9 mm)	3/16 in. (4.8 mm)
Door/Drawer Locks*	3/4 in. (19 mm)	5/16 in. (7.9 mm)	3/16 in. (4.8 mm)
File Locks*	15/32 in. (11.9 mm)	15/32 in. (11.9 mm)	15/32 in. (11.9 mm)
Locker Locks*	9/32 in. (7.1 mm)	1/4 in. (6.4 mm)	7/32 in. (5.6 mm)
Sliding Door Locks*	3/4 in. (19 mm)	7/16 in. (11.1 mm)	1/4 in. (6.4 mm)