

ANSI/BHMA A156.37-2020
Revision of ANSI/BHMA A156.37-2014



STANDARD
FOR
MULTIPOINT LOCKS



SPONSOR
BUILDERS HARDWARE MANUFACTURERS ASSOCIATION

AMERICAN NATIONAL STANDARDS INSTITUTE
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AMERICAN NATIONAL STANDARD

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FOREWORD (This Foreword is not a part of ANSI/BHMA A156.37)

The general classification of builders hardware includes a wide variety of items which are divided into several categories. This Standard is a result of the collective efforts of members of the Builders Hardware Manufacturers Association, Inc. who manufacture this product. The total Product Standards effort is, therefore, a collection of sections, each covering a specific category of items.

Performance tests and, where necessary, material and dimensional requirements have been established to ensure safety and stability to which the public is entitled. There are no restrictions on design except for those dimensional requirements imposed for reasons given above.

This Standard is not intended to obstruct but rather to encourage the development of improved products, methods and materials. 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.

In most cases, products have been described in grade levels related to performance. Choice of grade and specific product are to be made on the basis of utility, aesthetics, security objectives and end use desired.

Users of this Standard consult applicable local building codes as to requirements affecting the functions of locks used on fire doors and doors within a mean of egress.

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1. SCOPE

1.1 This Standard establishes performance requirements for Multipoint Locks and includes operational tests, cycle tests, strength tests, security tests, and finish tests.

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

1.3 **Grade Qualifications** (Also See Appendix A.) Manufacturers shall indicate the Grade level of their locks. Locks passing all tests within Sections 7, 8, 9 and 11 shall be assigned the respective Operational Grade; locks passing all the tests within Section 10 shall be assigned the respective Security Grade. It is permissible to qualify a model to an Operational Grade only; models meeting both Operational and Security Grades shall indicate the Grade Level for each.

2. DEFINITIONS

2.1 Bolts

2.1.1 **Auxiliary Dead Latch** An actuator which automatically locks a projected latch bolt against return by end pressure.

2.1.2 **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 is closed and the dead bolt thrown, it extends into a hole provided in the strike, locks the door, and does not retract with end pressure.

2.1.3 **Latch Bolt** A lock component having a beveled end which projects from the lock front in an extended position, but is forced back into the lock case by end pressure or drawn back by action of the lock mechanism. When the door is closed, the latch bolt projects into a hole provided in the strike, and holds the door in a closed position.

2.1.4 **Deadlocking Latch Bolt** A spring actuated latch bolt with a beveled end and incorporating an actuator which, when depressed, automatically locks the projected latch bolt against return by end pressure. Also called dead latch.

2.1.5 **Deadlocking Latch Bolt Actuator** A component of the latch bolt which, automatically locks a projected latch bolt against return by end pressure.

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

2.5 **Cylinder** The subassembly of a mechanical lock containing a plug with keyway and a body with movable retainers.

2.6 **Cylinder Guard** That portion that surrounds the otherwise exposed portion of a cylinder to protect the cylinder from wrenching, cutting, pulling or prying.

2.7 **Handleset** A handle with a thumbpiece.

2.8 **Input Devices** Electrified input devices and push button mechanism.

2.9 **Key** A properly combined device specifically intended to operate a corresponding cylinder.

2.10 **Locked** Locked is when the dead locking latch bolt or dead bolt or both cannot be retracted by operating the outside lever or knob.

2.11 **Lock Front** A plate fastened to the edge of a door through which the bolts pass.

2.12 **Mortise Lock or Latch** A lock or latch fitting into a mortised cavity prepared in the edge of a door. The bolts are operated by knobs, levers, turns, thumb pieces, paddles or cylinders engaging the mortise lock or latch through holes prepared in the faces of the door.

2.13 Multipoint Lock A mechanical locking system which engages the door frame with bolts, latches or other fastening devices at two or more locations, and which is not an exit device (per A156.3), interconnected lock (per A156.12), or mortise lock (per A156.13).

Multipoint Lock Primary Bolts Bolts which engage as a result of closing the door.

Multipoint Lock Secondary Bolts Bolts which engage as a result of secondary action after the door is closed.

2.14 Narrow Stile An extruded, aluminum door & frame component used in aluminum & glass entrance systems. These narrow stile components are typically 1-3/4" thick x 2" wide and require hardware designed for these applications.

2.15 Narrow Stile Multi Point Lock A multipoint lock designed to fit and operate in narrow stile applications

2.16 Paddle The component that projects or retracts a dead bolt or latch bolt by pushing or pulling.

2.17 Strike A mortised or surface mounted plate fastened to the door frame into which the bolts project.

2.18 Turn The component that projects or retracts a dead bolt or latch bolt by turning. Sometimes called a turn piece or thumb

2.19 Trim Exposed lockset components with operating and non-operating elements, including but not limited to, knobs, levers, handle sets, push-pull operators, thumbpieces, escutcheons and roses. Enables operation of the latches, enhances appearance, and/or provides security protection.

2.20 Thumbpiece A lever, projecting from a handle, pressed by the thumb to retract a latch bolt.

3. GENERAL

3.1 Cylinders and Input Devices for Locks Cylinders supplied or mated with locks shall meet the performance requirements for the appropriate cylinder types and grade level found in the ANSI/BHMA Standard A156.5-2020 for Cylinders and Input Devices for the lock to retain its grade listing. Assemblies take the grade level of the lowest graded component. Other mechanisms are permitted to be used in lieu of cylinders providing the performance and security criteria are equivalent to that of cylinders. Suffix D shall be indicated in the certified products directory for locks to be used only with drill resistance cylinders as evaluated in A156.5.

3.2 Tolerances Where only minus tolerances are given, the dimensions are permitted to be exceeded at the option of the manufacturers. All values which 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 shall be ± 2 degrees.

3.3 Where levers are referenced, knobs, paddles, or handle sets are permitted to be used, except for tests which apply to specific trim.

3.4 Roses, escutcheons, knobs, levers, turns, paddles, and cylinder guards shall cover all door preparation openings.

3.5 No lock can provide complete security by itself. Locks may be defeated by forcible or technical means, or evaded by entry elsewhere on the property. No lock can substitute for caution, awareness of your environment, and common sense. Builders hardware is available in multiple performance grades to suit the application. In order to enhance security and reduce risk, consult a qualified locksmith or other security professional. For applications where pick resistance and other higher security protections are required users should consider locks meeting UL 437 or ANSI/BHMA A156.30 for High Security Cylinders.

3.6 Reference to other Standards Referenced standards are available from www.buildershardware.com, www.ansi.org, www.astm.org, and www.ul.com.

3.7 Values Required values in this Standard are given in US units. The SI (metric) equivalents are approximate.

3.8 Dead Latching When any function of a lock combines a dead bolt and auxiliary dead latch, the auxiliary dead latch shall be effective whenever the dead bolt is projected or the outside lever or knob is locked.

3.9 Codes Certain lock functions are not permitted on doors within a means of egress. Consult local Authority Having Jurisdiction. When locks and latches are used in fire door assemblies, they shall be listed for use in fire doors by a Nationally Recognized Testing Laboratory (NRTL) and shall be under an in-plant follow-up inspection service.

4. DESCRIPTION AND FUNCTION NUMBERS

Due to the variety and complexity of Multipoint Lock designs, this standard does not offer type numbers and function descriptions typical of other BHMA Standards. Please consult individual manufacturer's catalogs for specifying information. Multipoint Locks meeting this standard shall pass all the applicable tests as described in each section.

5. GENERAL TEST PARAMETERS

5.1 Lubrication shall not be applied at any time during the tests.

5.2 Failure of the test fixture does not constitute pass or failure of the tests.

5.3 Mounting locks The test equipment shall permit installation of the complete lockset with trim in accordance with the manufacturer's recommendations as described in the template and instruction sheets regularly furnished. Unless otherwise specified, locksets shall be properly mounted in accordance with the manufacturer's instructions. The lock front-to-strike spacing shall be 1/8 in. +/- 1/32 (3.2 +/- 0.8 mm) at centerline of bolt for all tests. Where specified within this Standard, use the manufacturer's supplied strike and mounting instructions.

5.4 Optional brackets may be used to provide clearance for weights and applied loads where hardware makes direct attachment or application impractical. When brackets are used, the grounding points to the door shall be equidistant about the originally identified point of application (see Figure A-6 in appendix) Brackets are not intended to redistribute the load or change the direction of application. Use of specific brackets shall be approved by the National Certified Testing Laboratory.

5.5 Test Cylinders Cylinders used for testing, shall have certification per ANSI/BHMA A156.5-2020 for Cylinders and Input Devices for Locks. For cycle testing, at the manufacturers discretion, the moveable detainers are allowed to be removed.

5.6 Standard Test Methods for Security of Swinging Door Assemblies Some of the test equipment, fixtures and strength tests required in this Standard are taken from ASTM F476-14. Descriptions of the test equipment, fixtures and strength tests required have been incorporated by reference to the specific paragraph numbers found in ASTM F476.

5.7 Tests shall be made using standard locksets. Complete instructions and templates shall be included. Failure of any one lock in any of the tests shall constitute failure of the complete qualification tests.

5.8 Testing shall be performed on combinations of engagement points necessary to fully evaluate the product. Due to the wide range of designs and terms for engagement points in this product, where tests describe "latches", or "bolts" etc., the test shall be applied to all applicable points, unless otherwise specified.

5.9 Sample Test Locks

Operational and Cycle Tests	Strength Tests	Finish Tests (per Finish)	Security Tests
1 Lock Sample	3 Lock Samples	1 Sample	11 Lock Samples

5.10 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.

5.11 Functions with Keyed *Inside* Locked Trim are subject to the same tests as Locked Outside Trim unless otherwise specified. Use separate samples.

6. TEST EQUIPMENT AND FIXTURES

6.0 As agreed to by the manufacturer and test lab, modified or equivalent equipment is permissible, provided the evaluation and results per the respective test descriptions are not affected.

6.1 Examples of Torque Applicators

