

ANSI/BHMA A156.1-2000
Revision of:
ANSI A156.1-1997



AMERICAN NATIONAL STANDARD

FOR

BUTTS AND HINGES



SPONSOR

BUILDERS HARDWARE MANUFACTURERS ASSOCIATION, INC.

AMERICAN NATIONAL STANDARDS INSTITUTE, INC.
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AMERICAN NATIONAL STANDARD

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FOREWORD (This Foreword is not a part of ANSI/BHMA A156.1)

The general classification of builders hardware includes a wide variety of items which are divided into several categories. To recognize this diversity, a sectional classification system has been established. Butts and Hinges is one such section and 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 insure 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. It is also required that hinges fit certain cut-out dimensions.

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 with Grade 1 being the top rating. Grade classifications indicate levels only within their own product category. Choice of grade and specific product are made on the basis of utility, aesthetics, security objectives and end use desired.

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. Individual manufacture's catalogs are consulted.

Users of this Standard consult applicable local building codes as to requirements affecting the functions of hinges used on fire doors.

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The Builders Hardware Manufacturers Association (BHMA) Certification Program was developed as a means for producers of builders hardware to indicate compliance with American National Standards sponsored by BHMA. Participating manufacturers certify compliance with the standards based on a continuing program of passing the prescribed tests. Third party testing is performed by a Nationally Recognized Test Laboratory. The program is open to all manufacturers of builders hardware whether or not they are members of BHMA.

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1. SCOPE

1.1 This Standard establishes requirements for lightweight, standard weight, heavy weight and detention hinges. Cycle tests, lateral and vertical wear tests, friction tests, strength tests, finish tests, and material and dimensional requirements are included.

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

1.3 Consult NFPA 80 - 1992 for Fire Doors and Windows concerning hinge requirements for fire doors.

2. DEFINITIONS

2.1 Bearings

2.1.1 **Anti-Friction Bearing.** Bearing material between the various moving parts of a hinge.

2.1.2 **Plain Bearing** (non anti-friction bearing). When no bearing material is between the various moving parts of a hinge.

2.2 **Butt Hinge.** See Full Mortise Hinge

2.3 **Detention Hinge.** A hinge having higher security attributes than conventional hinges and subject to more stringent tests. These hinges are usually constructed with a maximum security pin. Alternate designs which meet the higher security attributes are acceptable.

2.4 **Full Mortise Hinge.** A hinge having one leaf mortised into the hinge edge of a door and the other leaf mortised into the rabbet of a frame.

2.5 **Full Surface Hinge.** A hinge having one leaf attached to the face of a door and the other leaf attached to the face of a door frame.

2.6 **Half Mortise Hinge.** A hinge having one leaf mortised into the butt edge of a door and the other leaf attached to the face of a door frame.

2.7 **Half Surface Hinge.** A hinge having one leaf attached to the face of a door and the other leaf mortised into the rabbet of a door frame.

2.8 **Hospital Tips.** A hinge barrel having sloped ends.

2.9 **Maximum Security Pin (MSP).** A hinge pin that has been fixed after insertion by welding, pinning, or other permanent means to prevent hinge pin removal without the use of special tools. Set screws are not permitted. Affords greater security than a Non-Removable Pin.

2.10 **Non-Removable Pin (NRP).** A hinge pin secured by a set screw and affords less security than the Maximum Security Pin. This modification is intended as a deterrent only.

2.11 **Olive Knuckle Hinge.** A pivot hinge with a joint shaped like an olive.

2.12 **Pivot Hinge.** A hinge with a fixed pin and a single joint having a height less than the adjacent hinge leaves.

2.13 **Raised Barrel.** A full mortise hinge having an offset barrel.

2.14 **Reverse Safety Stud.** A projecting member on the back of each full mortise leaf that engages a hole in the door and jamb hinge reinforcing plates.