

ANSI/BHMA A156.1-2013
Revision of ANSI/BHMA A156.1-2006



AMERICAN NATIONAL STANDARD

FOR

BUTTS AND HINGES



SPONSOR

BUILDERS HARDWARE MANUFACTURERS ASSOCIATION, INC.

AMERICAN NATIONAL STANDARDS INSTITUTE, INC.

Approved March 7, 2013

AMERICAN NATIONAL STANDARD

An American National Standard implies a consensus of those substantially concerned with its scope and provisions. An American National Standard is intended as a guide to aid the manufacturer, the consumer and the general public. The existence of an American National Standard does not in any respect preclude anyone, whether he has approved the Standard or not, from manufacturing, marketing, purchasing, or using products, processes or procedures not conforming to the Standard. American National Standards are subject to periodic review and users are cautioned to obtain the latest editions.

CAUTION NOTICE: This American National Standard is permitted to be revised or withdrawn at any time. The procedures of the American National Standards Institute require that action be taken to reaffirm, revise, or withdraw this Standard no later than five years from the date of publication. Purchasers of American National Standards receive current information on all Standards by calling or writing the American National Standards Institute.

Published by
BUILDERS HARDWARE MANUFACTURERS ASSOCIATION, INC.
355 Lexington Avenue New York, New York 10017
www.buildershardware.com

Copyright ©2013 by the Builders Hardware Manufacturers
Association, Inc.

Not to be reproduced without specific authorization
from BHMA

Printed in the USA

This Standard was first published June 1969 by the Builders Hardware Manufacturers Association. It was entitled, "Standard 101 BHMA Product Standards Section A Butts and Hinges." ANSI approval was secured under the Canvass Method. BHMA was accredited on 21 March 1983 by ANSI as a sponsor using the Canvass Method.

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.

TABLE OF CONTENTS

1.	SCOPE.....	5
2.	DEFINITIONS.....	5
3.	GENERAL.....	6
4.	TEST EQUIPMENT.....	8
5.	TEST PROCEDURES.....	9
6.	TESTS FOR HINGES	1Error
	! Bookmark not defined.	
7.	DETENTION HINGES	13
8.	ILLUSTRATIONS OF TEST APPARATUS FOR FULL MORTISE HINGES.....	15
9.	ILLUSTRATIONS, TYPE NUMBERS AND DESCRIPTIONS OF HINGES.....	16
10.	EXPLANATION OF NUMBERING SYSTEM	24
	APPENDIX A (NOT A PART OF A156.1).....	26

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 80-2010 for Fire Doors and Windows concerning hinge requirements for fire doors.

2. DEFINITIONS

2.1 **Adjustable Hinges** A type of hinge that has one or more mechanisms for moving the position of one hinge leaf relative to the other to optimize alignment.

2.2 Bearings

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

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

2.3 **Butt Hinge** See Full Mortise Hinge

2.4 **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.

2.5 **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.

2.6 **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.

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

2.8 **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.

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

2.10 **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.

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

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

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

2.14 **Raised Barrel** A full mortise hinge having both hinge leaves offset to raise the barrel off the jamb