



Standard Specification for Alloy Steel Eyebolts¹

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This standard has been approved for use by agencies of the Department of Defense.

1. Scope *

1.1 This specification covers forged, quenched and tempered, alloy steel threaded eyebolts with improved toughness properties and intended primarily for low temperature applications. The eyebolts are chemically and metallurgically constituted to produce a low transition temperature to minimize brittle failure. Maximum thread size is 2.500 in. (63.50 mm).

1.2 The eyebolts are furnished in two types, as follows:

1.2.1 *Type 1*—Straight Shank Eyebolt.

1.2.2 *Type 2*—Shoulder Eyebolt.

1.3 The values stated in inch-pound units are to be regarded as the standard. The values in parentheses are for information only.

2. Referenced Documents

2.1 ASTM Standards:

A 370 Test Methods and Definitions for Mechanical Testing of Steel Products²

A 574 Specification for Alloy Steel Socket-Head Cap Screws³

A 751 Test Methods, Practices, and Terminology for Chemical Analysis of Steel Products²

D 3951 Practice for Commercial Packaging⁴

E 10 Test Method for Brinell Hardness of Metallic Materials⁵

E 18 Test Methods for Rockwell Hardness and Rockwell Superficial Hardness of Metallic Materials⁵

E 112 Test Methods for Determining the Average Grain Size⁵

E 340 Test Method for Macroetching Metals and Alloys⁵

E 709 Guide for Magnetic Particle Examination⁶

F 606 Test Methods for Determining the Mechanical Properties of Externally and Internally Threaded Fasteners, Washers, and Rivets³

F 1470 Guide for Fastener Sampling for Specified Mechani-

cal Properties and Performance Inspection³

2.2 ANSI/ASME Standards:

B1.1 Unified Screw Threads⁷

B18.15 Forged Eyebolts⁷

B18.24.1 Part Identifying Number (PIN) Code System⁸

3. Ordering Information

3.1 Orders for eyebolts under this specification shall include the following information to adequately describe the part:

3.1.1 ASTM specification number and date of issue,

3.1.2 Name of part (alloy steel eyebolts),

3.1.3 Regular or shoulder pattern (8.1),

3.1.4 Size (nominal diameter and threads),

3.1.5 Number of pieces,

3.1.6 Certification or test reports (if required) (13.1),

3.1.7 Additional requirements (if required), and

3.1.8 Supplementary requirements (if required).

3.1.9 For establishment of a part identifying system, see ASME B18.24.1.

4. Materials and Manufacture

4.1 *Melting Process*—The steel shall be made to a fine-grain practice using a melting process yielding a product conforming to the requirements of this specification.

4.2 *Forging*—Eyebolts shall be forged without welds.

4.3 *Heat Treatment*—The eyebolts shall be quenched and tempered in accordance with proper practice to yield a product conforming to the requirements of this specification.

4.4 *Machining*—The eyebolt shall be machined prior to or after heat treatment at the manufacturer's option.

5. Chemical Composition

5.1 *Limits*—The eyebolts shall be manufactured from steels having a heat analysis conforming to the requirements in Table 1.

5.2 Product Analysis:

5.2.1 The purchaser reserves the right to conduct product analyses on the finished eyebolts or request the manufacturer to conduct product analyses tests. The composition thus determined shall conform to the requirements specified in Table 1.

⁷ Available from American National Standards Institute, 11 West 42nd Street, 13th Floor, New York, NY 10036.

⁸ Available from American Society of Mechanical Engineers, Three Park Avenue, New York, NY 10016-5990.

¹ This specification is under the jurisdiction of ASTM Committee F16 on Fasteners and is the direct responsibility of Subcommittee F16.02 on Steel Bolts, Nuts, Rivets, and Washers.

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² *Annual Book of ASTM Standards*, Vol 01.03.

³ *Annual Book of ASTM Standards*, Vol 01.08.

⁴ *Annual Book of ASTM Standards*, Vol 15.09.

⁵ *Annual Book of ASTM Standards*, Vol 03.01.

⁶ *Annual Book of ASTM Standards*, Vol 03.03.

*A Summary of Changes section appears at the end of this standard.