This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.

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Standard Specification for Steel Forgings, Carbon and Alloy, for General Industrial Use[1]

This standard is issued under the fixed designation A668/A668M; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

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

1. Scope*

1.1 This specification covers untreated and heat-treated carbon and alloy steel forgings for general industrial use. Other ASTM specifications for forgings are available for specific applications such as pressure vessels, railroad use, turbine generators, gearing, and others involving special temperature requirements.

1.2 Hot-rolled or cold finished bars are not within the scope of this specification.

1.3 Six classes of carbon steel and seven classes of alloy steel forgings are listed (see Section 7), which indicates their required heat treatments, as well as mechanical properties.

1.4 Provision, with the suffix H for certification and marking, for the supply of forgings after hardness testing only.

1.5 Supplementary requirements, including those in Specification A788/A788M, of an optional nature are provided. These shall apply only when specified by the purchaser.

1.6 Appendix X1 lists the current classes corresponding to the various classes of Specifications A235, A237, and A243, which have been superseded by this specification.

1.7 The values stated in either SI units or inch-pound units are to be regarded separately as standard; within the text and tables, the SI units are shown in brackets. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in nonconformance with the standard.

1.8 Unless the order specifies the applicable "M" specification, the forgings shall be furnished to the inch-pound units.

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2. Referenced Documents

2.1 *ASTM Standards:*[2]

A275/A275M Practice for Magnetic Particle Examination of Steel Forgings
A370 Test Methods and Definitions for Mechanical Testing of Steel Products
A388/A388M Practice for Ultrasonic Examination of Steel Forgings
A788/A788M Specification for Steel Forgings, General Requirements
E290 Test Methods for Bend Testing of Material for Ductility
E340 Practice for Macroetching Metals and Alloys

3. Terminology

3.1 The terminology section of Specification A788/A788M is applicable to this specification.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *class*—a description of steel forgings based on heat treatment, mechanical properties and composition.

3.2.2 *controlling cross section thickness (T_C)*—the diameter of the largest theoretical sphere which can be inscribed within the volume of the forging.

3.2.3 T_P—designates prolongations which have a size other than the controlling cross section thickness (T_C).

[1] This specification is under the jurisdiction of ASTM Committee A01 on Steel, Stainless Steel and Related Alloys and is the direct responsibility of Subcommittee A01.06 on Steel Forgings and Billets.

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[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

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

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