Designation: A1090/A1090M – 19 (Reapproved 2024)

Standard Specification for Forged Rings and Hollows for Use as Base Plates in Power Transmission Structures[1]

This standard is issued under the fixed designation A1090/A1090M; 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.

1. Scope

1.1 This specification covers high-strength, low-alloy steel ring and hollow forgings intended primarily for use as base plates in welded tubular structures for power transmission applications. However, use of this specification is not restricted to such applications and it may be used in other applications for which the attributes of the materials, as defined by this specification, are appropriate.

1.2 The atmospheric corrosion resistance of Grades A, B, and C in most environments is substantially better than that of carbon structural steel with or without copper addition (see Note 1). When exposed to the atmosphere, these grades are suitable for many applications in the bare (unpainted) condition.

NOTE 1—See Guide G101 for methods of estimating the atmospheric corrosion resistance of low-alloy steels.

1.3 The thickness of forgings is limited only by the capacity of the composition to meet the specified mechanical property requirements; however, current practice normally limits the thickness of forgings furnished under this specification to a range of 2 in. to 6 in. [51 mm to 152 mm].

NOTE 2—When the steel is to be welded, a welding procedure suitable for the grade of steel and intended use or service should be used. See Appendix X3 of Specification A6/A6M for information on weldability.

1.4 The text of this specification contains notes, footnotes, or both, that provide explanatory material. Such notes and footnotes, excluding those in tables and figures, do not contain any mandatory requirements.

1.5 Supplementary requirements are available but shall apply only when specified by the purchaser at the time of ordering.

1.6 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system are not necessarily exact equivalents; therefore, to ensure conformance with the standard, each system shall be used independently of the other, and values from the two systems shall not be combined.

1.7 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.8 *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.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

A6/A6M Specification for General Requirements for Rolled Structural Steel Bars, Plates, Shapes, and Sheet Piling

A370 Test Methods and Definitions for Mechanical Testing of Steel Products

A788/A788M Specification for Steel Forgings, General Requirements

A1058 Test Methods for Mechanical Testing of Steel Products—Metric

E112 Test Methods for Determining Average Grain Size

G101 Guide for Estimating the Atmospheric Corrosion Resistance of Low-Alloy Steels

3. Ordering Information

3.1 In addition to the ordering information required by Specification A788/A788M, the purchaser shall specify:

3.1.1 Grade and class designation.

3.1.2 Surface condition (for example, as-forged, rough machined, etc.).

3.1.3 Include a sketch or written description of the forging with the inquiry and order.

[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.

Current edition approved March 1, 2024. Published March 2024. Originally approved in 2014. Last previous edition approved in 2019 as A1090/A1090M – 19. DOI: 10.1520/A1090_A1090M-19R24.

[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.