



Designation: A1090/A1090M – 14

Standard Specification for Forged Rings and Hollows Produced from Steels with Atmospheric Corrosion Resistance¹

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. 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 these steels 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, this steel is 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 to 6 in. [51 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 may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the standard.

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, 2014. Published March 2014. DOI: 10.1520/A1090_A1090M-14

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 and health practices and determine the applicability of regulatory limitations prior to use.*

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 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.

3.2 The purchaser may specify:

3.2.1 Limits on repair welding, if permissible.

3.2.2 Non-destructive evaluation, in which case reporting and acceptance criteria must be provided.

4. Materials and Manufacture

4.1 The steel shall be deoxidized and shall be capable of achieving an ASTM grain size of 6 or finer when evaluated using any of the methods in Test Methods [E112](#).

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.