



Designation: A 859/A 859M – 02₄

An American National Standard

Standard Specification for Age-Hardening Alloy Steel Forgings for Pressure Vessel Components¹

This standard is issued under the fixed designation A 859/A 859M; 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 requirements for low-carbon age-hardening nickel-copper-chromium-molybdenum-columbium alloy steel forgings for pressure vessel components.

1.2 Forgings under this specification are available as Grades A or B. Grade A may be ordered in one or two classes as follows:

1.2.1 Grade A Class 1—Normalized-and-precipitation-heat-treated, providing a minimum yield strength of 55 ksi [380 MPa] and a minimum tensile strength of 65 ksi [450 MPa].

1.2.2 Grade A Class 2—Quenched-and-precipitation-heat-treated, providing a minimum yield strength of 65 ksi [450 MPa] and a minimum tensile strength of 75 ksi [MPa].

1.2.3 Grade A was the original steel composition in this specification.

1.3 Although the material is readily weldable, welding procedures are of fundamental importance and must be such as not to affect adversely the properties of the material, especially in the heat-affected zone. It is presupposed that welding procedures will be suitable for the material being welded.

1.4 Supplementary requirements, including those applicable in Specification A 788, are provided for use when additional testing or inspection is desired. These shall apply only when specified individually by the purchaser in the order.

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

1.6 This specification is expressed in both inch-pound and SI units. However, unless the order specifies the applicable “M” specification designation [SI units], the material shall be furnished to inch-pound units.

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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