



Standard Specification for Alloy-Steel Bolting for Special Applications¹

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1. Scope*

1.1 This specification² covers regular and special-quality alloy steel bolting materials and bolting components that may be used for nuclear and other special applications. See Specification [A962/A962M](#) for the definition of bolting.

1.2 The following referenced common requirements are indispensable for application of this specification: Specification [A962/A962M](#).

1.3 Supplementary requirements of an optional nature are provided for use at the option of the purchaser. These supplementary requirements only apply when specified individually by the purchaser in the purchase order or contract.

1.4 This specification is expressed in both inch-pound units and in SI units; however, unless the purchase order or contract specifies the applicable “M” specification designation (SI units), inch-pound units shall apply.

1.5 The values stated in either SI units or inch-pound units are to be regarded separately as standard. Within the text, 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 non-conformance with the standard.

2. Referenced Documents

2.1 ASTM Standards:³

[A962/A962M](#) Specification for Common Requirements for Bolting Intended for Use at Any Temperature from Cryogenic to the Creep Range

[E45](#) Test Methods for Determining the Inclusion Content of Steel

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 [A01.22](#) on Steel Forgings and Wrought Fittings for Piping Applications and Bolting Materials for Piping and Special Purpose Applications.

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² For ASME Boiler and Pressure Vessel Code Applications see related Specification SA-540 in Section II of that Code.

³ 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.

3. Ordering Information

3.1 The inquiry and orders for bolting material and bolting components under this specification shall include the following, as required, to describe the desired items adequately:

- 3.1.1 Grade and Class
- 3.1.2 Condition (Section 5),
- 3.1.3 Heat treatment (Section 6),
- 3.1.4 Supplementary Requirements (S1 to S9),
- 3.1.5 Reports required (Section 16),
- 3.1.6 End use, and
- 3.1.7 Any special requirements.

3.2 The purchaser is referred to the listed supplementary requirements.

4. Common Requirements

4.1 Bolting materials and bolting components supplied to this specification shall conform to the requirements of Specification [A962/A962M](#). These requirements include test methods, finish, thread dimensions, macro etch, marking, certification, optional supplementary requirements, and others. Failure to comply with the requirements of Specification [A962/A962M](#) constitutes nonconformance with this specification. In case of conflict between this specification and Specification [A962/A962M](#), this specification shall prevail.

5. Manufacture

5.1 Bolting material shall be supplied hot-rolled or hot-forged or cold-finished at the option of the producer. However, if desired by the purchaser, cold finishing may be specified.

6. Heat Treatment

6.1 Bolting material ordered in the annealed condition shall have a structure suitable for machining. Such annealed material is not intended to be used without subsequent quenching and tempering as specified in 6.2.

6.2 Bolting material ordered in the liquid-quenched and tempered condition shall be uniformly reheated from a temperature below the cooling transformation range to the proper austenitizing temperature, quenched in a liquid medium under substantially uniform conditions, and then uniformly reheated for tempering. The minimum tempering temperature shall be 850 °F [455 °C].

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