



Standard Specification for Roof and Rock Bolts and Accessories¹

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1. Scope*

1.1 This specification covers the chemical, mechanical, and dimensional requirements for roof and rock bolts and accessories. Addressed in this specification are double-end threaded and slotted steel bars; fully grouted bolts and threaded bars; mechanical anchorage devices used for point anchorage applications; roof truss systems; partially grouted deformed bolts; formable anchorage devices; cable bolt systems; expandable rock bolts and other frictional anchorage devices. All of these products represent various designs used for ground support systems. This specification can be revised to address new technologies.

1.2 The values stated in inch-pound units are to be regarded as standard. No other units of measurement are included in this standard.

1.3 This hazard statement applies only to Section 10, Test Methods of this specification. *This standard does not purport to address 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

A29/A29M Specification for General Requirements for Steel Bars, Carbon and Alloy, Hot-Wrought

A47/A47M Specification for Ferritic Malleable Iron Castings

A194/A194M Specification for Carbon and Alloy Steel Nuts for Bolts for High Pressure or High Temperature Service, or Both

A220/A220M Specification for Pearlitic Malleable Iron

A370 Test Methods and Definitions for Mechanical Testing of Steel Products

A416/A416M Specification for Steel Strand, Uncoated Seven-Wire for Prestressed Concrete

A536 Specification for Ductile Iron Castings

A563 Specification for Carbon and Alloy Steel Nuts

A615/A615M Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement

A882/A882M Specification for Filled Epoxy-Coated Seven-Wire Prestressing Steel Strand

A1011/A1011M Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength

A751 Test Methods, Practices, and Terminology for Chemical Analysis of Steel Products

D6637 Test Method for Determining Tensile Properties of Geogrids by the Single or Multi-Rib Tensile Method

D1248 Specification for Polyethylene Plastics Extrusion Materials for Wire and Cable

F436 Specification for Hardened Steel Washers

F606 Test Methods for Determining the Mechanical Properties of Externally and Internally Threaded Fasteners, Washers, Direct Tension Indicators, and Rivets

2.2 ASME Standards:³

B 1.1 Unified Screw Threads

B 1.3M Screw Thread Gaging Systems for Dimensional Acceptability—Inch and Metric Screw Threads

B 18.2.2 Square and Hex Nuts

3. Terminology

3.1 Definitions:

3.1.1 *barrel*—a device housing normally either 2 or 3 piece cable strand wedges

3.1.2 *bearing plates, plate washers, mine roof plates*—plates that serve to distribute the load from the exposed end of the bolt or threaded bar to the rock face or intermediate member.

3.1.2.1 *header plates*—large rectangular bearing plates, usually 6 in. wide by 16 to 18 in. long, or any other shape with an equivalent area, used in substitution for wooden header blocks

¹ This specification is under the jurisdiction of ASTM Committee F16 on Fasteners and is the direct responsibility of Subcommittee F16.02 on Steel Bolts, Nuts, Rivets and Washers.

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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.

³ Available from American Society of Mechanical Engineers (ASME), ASME International Headquarters, Three Park Ave., New York, NY 10016-5990, <http://www.asme.org>.