AS/NZS 1252.1:2016
(Incorporating Amendment No. 1)

AS/NZS 1252.1:2016

Australian/New Zealand Standard™

High-strength steel fastener assemblies for structural engineering—Bolts, nuts and washers

Part 1: Technical requirements

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee ME-029, Fasteners. It was approved on behalf of the Council of Standards Australia on 6 December 2016 and by the New Zealand Standards Approval Board on 9 December 2016.
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The following are represented on Committee ME-029:

Association of Accredited Certification Bodies
Association of Wall and Ceiling Industries of Australia and New Zealand
Australasian Corrosion Association
Australian Chamber of Commerce and Industry
Australian Engineered Fasteners and Anchors Council
Australian Industry Group
Australian Steel Institute
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Bureau of Steel Manufacturers of Australia
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Part 1: Technical requirements

First published in Australia as AS B157—1960.
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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee ME-029, Fasteners, to supersede AS/NZS 1252:1996, *High-strength steel bolts with associated nuts and washers for structural engineering*.

This Standard incorporates Amendment No. 1 (November 2018). The changes required by the Amendment are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure or part thereof affected.

The objective of this Standard is to provide manufacturers of high-strength steel bolt assemblies with requirements and tests to ensure that such assemblies are suitable for bolted connections in steelwork construction, consistent with the steel design Standards AS 4100 and NZS 3404.

The major technical changes incorporated in this edition relate to updated testing and conformity requirements and the inclusion of a specific nominated European fastener Standard as a 'deemed to satisfy' alternative product and an additional assembly type. These aspects are designed to improve procurement outcomes in the Australian marketplace.

The specific changes in this edition include the following:

(a) Updating and expansion of definitions to align, where relevant, with ISO definitions.

(b) Revision of dimensions to align with ISO requirements.

(c) Nomination of bolt assemblies to EN 14399-3 Type HR property class 8.8 as an alternative assembly type.

(d) Nomination of bolt assemblies to EN 14399-3 Type HR property class 10.9 as an additional assembly type.

NOTE: This is designed to facilitate the use of property class 0.9 preloaded bolt assemblies if written into a future revision of AS 4100 or NZS 3404.

(e) Revision of certain dimensions (in particular the across flat dimensions) of the M20 bolt and nut.

NOTE: The 1996 revision of AS 1252—1983 introduced changes to the M20 head and nut dimensions based on ISO dimensions that were not readily accepted by industry. This current revision has reinstated the dimensions from the 1983 edition, which is commonly available and consistent with the specific EN 14399-3 alternative assembly type nominated in this Standard [see Item (d)].

(f) Addition of the k-class definition and testing requirements, which defines the torque-tension relationship during tightening of the bolt assemblies.

NOTE: This is designed to facilitate use of torque as a tightening method if written into a future revision of AS 4100 or NZS 3404.

(g) New Section 5 specifically defining the performance requirements of the bolt assembly. This is supported with an updated normative appendix, Appendix D, which sets out bolt assembly tests.

(h) New Section 6 on identification, certification and testing.

(i) Inclusion of the M12 product.

(j) New informative Appendix A, describing the differences between the European 'HR' and 'HV' bolt types.

(k) New Appendix B on product conformity.

(l) New informative Appendix C on purchasing guidelines.

Previous editions of this Standard were based on and, except for the marking requirements for the nuts and bolts, technically equivalent to the following withdrawn ISO Standards for the relevant property class:

ISO

4775:1984 Hexagon nuts for high-strength structural bolting with large width across flats—Product grade B—Property classes 8 and 10

7411:1984 Hexagon bolts for high-strength structural bolting with large width across flats (thread lengths according to ISO 888)—Product grade C—Property classes 8.8 and 10.9

7415:1984 Plain washers for high-strength structural bolting, hardened and tempered

Statements expressed in mandatory terms in notes to figures and tables are deemed to be requirements of this Standard.

The terms ‘normative’ and ‘informative’ have been used in this Standard to define the application of the appendix to which they apply. A ‘normative’ appendix is an integral part of a Standard, whereas an ‘informative’ appendix is only for information and guidance.

This revision is compatible with AS 4100—1998 incorporating Amendment No. 1 (2012).

NOTE: It is the intent of the committee to replace this Standard with the EN 14399 series, subject to Standards Australia review processes. This may require further amendment of AS 4100.

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SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard specifies the dimensional, material and marking requirements for steel bolt assemblies comprising steel bolts of property class 8.8, steel nuts of property class 8 with ISO metric coarse pitch series threads, in diameters from 12 mm to 36 mm, and associated hardened and tempered steel washers intended for use in steel structures. This Standard also specifies an additional bolt assembly type of property class 10.9 to EN 14399.3.

The bolt assemblies are intended to be fully tensioned but may also be used in a snug tight condition or where designed to be partially tensioned. This Standard also sets out tests to verify the suitability of high-strength bolt, nut and washer assemblies for tensioning (preloading) for bolted connections in steelwork construction.

This Standard is intended to apply to the manufacture of high-strength steel bolt assemblies.

NOTE: AS/NZS 1252.2 provides requirements for verification testing.

1.2 APPLICATION

Bolts, nuts and washers shall comply with the requirements of this Section and the following Sections as applicable:

(a) Bolts ..... Section 2.

(b) Nuts ..... Section 3.

(c) Washers ..... Section 4.

(d) Assemblies ..... Section 5.

(e) Identification, certification and testing ..... Section 6.

1.3 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS

1275 Metric screw threads for fasteners

1815 Metallic materials—Rockwell hardness test

1815.1 Method 1: Test method (scales A, B, C, D, E, F, G, H, K, N, T)

1817 Metallic materials—Vickers hardness test

1817.1 Method 1: Test method (ISO 6507-1:1997, MOD)

1897 Fasteners—Electroplated coatings

2193 Calibration and classification of force-measuring systems

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