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for

AS/NZS 1252.2:2016 High-strength steel fastener assemblies for structural engineering

Australian/New Zealand Standard™

High-strength steel fastener assemblies

AS/NZS 1252.2:2016

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 25 November 2016 and by the New Zealand Standards Approval Board on 9 December 2016.
This Standard was published on 13 December 2016.

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
Austroads
Bureau of Steel Manufacturers of Australia
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This Standard was issued in draft form for comment as DR AS/NZS 1252.2:2016.

AS/NZS 1252.2:2016

Australian/New Zealand Standard™

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

Part 2: Verification testing for bolt assemblies

Originated in Australia as AS B157—1960.
Previous edition jointly revised and designated AS/NZS 1252:1996.
AS/NZS 1252:1996 jointly revised and designated in part as AS/NZS 1252.2:2016.

Jointly published by SAI Global Limited under licence from Standards Australia Limited, ... Wellington 6011.

ISBN 978 1 76035 646 0

PREFACE

This Standard was prepared by the Joint Standards Australia/Standa
Committee ME-029, Fasteners, to supersede, in part, AS/NZS 1252:19
steel bolts with associated nuts and washers for structural engineering.

This Standard is a companion document to AS/NZS 1252.1 *High*
assemblies for structural engineering—Bolts, nuts and wash
requirements. The verification testing specified in this Standard is
required by AS/NZS 1252.1.

The objective of this Standard is to give provisions for verification
steel bolt assemblies for structural engineering for suppliers, s
procurement agencies and purchasers) and third-part
confidence in the product's conformity with the requiren

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Australian/New Zealand Standard

High-strength steel fastener assemblies for structural engineering—

Part 2: Verification testing for bolt assemblies

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE OF STANDARD

This Standard gives provisions for verification testing of high-strength steel bolt assemblies for structural engineering, which is the testing undertaken by the supplier who first puts the product into the market in Australia or New Zealand.

NOTE: The verification testing is additional to the testing required by AS/NZS 1252.1.

1.2 EXCLUSIONS

oes not specify requirements for—

sting as related to manufacture and ongoing control of production;

process control; or

nt systems.

ial type testing or product testing requirements, such as test methods, and specific
rts related to ongoing control of production, are contained in AS/NZS 1252.1.

process control is also sometimes referred to as ongoing control of production,
quality control, or factory inspection.

equirements for management systems are found in other standards, e.g. the
nts for quality management systems are contained in AS/NZS ISO 9001.

This Standard d
(a) product re
(b) productio
(c) managem

NOTES:

1 Specific in
requirem
2 Production
productio
3 Specific r
requirem

1.3 APPLICA

1.3.1 General

cation testing in accordance with this Standard shall be undertaken by the supplier
ers to put the product into the market in Australia or New Zealand. Compliance with
Standard shall be required by specifiers (e.g. designers, procurement agencies and
hasers) to provide confidence by verification testing that the product meets the
rements of AS/NZS 1252.1.

Verifi
with t
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purch
requi

This Standard also provides supplementary requirements for product certification testing and for third party bodies in carrying out their conformity assessment activities.

NOTES:

1 When ordering fastener assemblies, this Standard should be specified.
2 The application of this Standard for verifying product conformity may be limited to one or more product types, or even to specific batches of product.

1.3.2 Legislation

This Standard needs to be read in conjunction with the legislation, by-laws, guidelines and regulations of regulatory authorities.

SECTION 2 HIGH-STRENGTH BOLT VERIFICATION TESTING

3).

2.1 SCOPE OF SECTION

This Section specifies the requirements for the verification testing that is used to provide confidence in a product's conformity with the requirements of AS/NZS 1252.1.

2.2 RESPONSIBLE PARTY

The party responsible for establishing product conformity by program as set-out within this Standard, shall be the supplier

NOTE: The responsible party may sub-contract verificatio laboratory.

2.3 ELEMENTS OF HIGH-STRENGTH BOLT VERIF

2.3.1 General

The term 'verification testing' is used to describe the comb

(a) Selection, including the planning and preparation ac produce the appropriate inputs in order to establish pr

(b) Determination activities, including all types of meth demonstrate compliance with the requirements of AS Standard.

(c) Review of the suitability, adequacy and effectiv determination activities described in Items (a) and activities with regard to fulfilment of the specified requ

(d) Decision regarding the outcome of the verification test of product conformity as determined in accordance wit

(e) Attestation (issuing of a statement that fulfilment of ... declared demonstrated).

2.3.2 Selection

Components of a structural bolt assembly shall meet the requ with respect to—

(a) method of manufacture;

(b) shape, dimensions and finish;

(c) material and mechanical characteristics;

(d) identification (marking of components);

(e) structural characteristics; and

The [illegible] shall meet the requirements of AS/NZS 1252.1, with respect to—

(i) functional characteristics; and

(ii) identification (packaging),

as detailed in the relevant Clauses of that Standard.

The party responsible for evaluating the product conformity shall collect all necessary evidence in order to establish that the requirements specified above are met.

2.3.3 Determination activities

2.3.3.1 *General*

Determination activities shall be based upon a verification testing program undertaken by competent personnel. This verification testing program shall be carried out in accordance with the minimum sampling and testing plan outlined in Clause 2.3.3.3 under the sole

TABLE 2.1

MINIMUM SAMPLING AND TESTING PLAN FOR VERIFICATION TESTING—DIMENSIONAL CHARACTERISTICS

Dimensional characteristic (see Note)	Sample size	Acceptan
Bolts:		
Width across flats (*s*)	3	
Width across corners (*e*)	Not required	–
GO thread gauge	3	
NO GO thread gauge	3	
Geometric tolerances	*Not required*	–
Nuts:		
Width across flats (*s*)	3	
Width across corners (*e*)	Not required	–
Nut height (*m*)	3	
Socket NO GO gauge	3	
Geometric tolerances	Not required	–
Washers:		
Hole diameter (d_1)	3	
Outside diameter (d_2)	2	
Thickness/chamfer (*h*)	3	

NOTE: Symbols are defined in Figures 2.1, 3.1 and 4.1 of AS/NZS appropriate.

NAL

ce no. (Ac)
0
–
0
0
–
0
–
0
0
–
0
0
1

1252.1, as

TABLE 2.2

MINIMUM SAMPLING AND TESTING PLAN FOR VERIFICATION TESTING—MECHANICAL CHARACTERISTICS

Dimensional characteristic	Sample size	Acceptance no. (Ac)
Bolts:		
Ultimate tensile strength	3	0
Proof load test	3	0
Surface integrity—non-destructive	8	0
Surface integrity—destructive	Not required	
Chemical composition	Not required	
Metallurgical characteristics	Not required	
Coating	5	0
Other specified characteristics	5	0
Nuts:		
Proof load test	5	0
Hardness	8	0
Washers:		
Hardness	8	0
Assemblies:		
Assembly test	3	0

2.3.3.5 *Sampling, testing and assessment*

Sampling, testing and assessment shall be undertaken in the following steps:

(a) Select samples at random from the assembly lot.

(b) For each characteristic listed in Tables 2.1 and 2.2, carry out the inspection or test on the number of samples required.

(c) Record the number of nonconforming characteristics and accept the assembly lot if this number is less than or equal to the acceptance number (Ac).

(d) For any characteristic, if the number of nonconforming test results is greater than the acceptance number (Ac), then reject the assembly lot.

2.3.3.6 *Re-testing in case of nonconforming product*

Where a test indicates that an assembly lot is nonconforming, a sample of additional items, of the sample size specified in Table 2.3, for the number of non-conformances, shall be taken from the assembly lot and tested for the particular nonconforming parameter(s).

If the additional test results demonstrate conformance, then the assembly lot shall be deemed to comply, and all of the additional results included in the records.

If any of the additional test results demonstrate nonconformance, then the assembly lot shall be rejected as nonconforming and the supplier shall take steps to ensure the manufacturer is informed and the nonconforming assembly lot is not put into the market. The supplier shall [illegible] procedures specifying the processing of nonconforming product [illegible]

TABLE 2.3

MINIMUM SAMPLING AND TESTING

PLAN FOR VERIFICATION TESTING, RE-TESTING AFTER

ATE OF IS NONCONFORMING

INITIAL TESTS INDIC

	Initial test sample size = 8	
. (Ac)	Sample size	Acceptance No. (Ac)
	8 (initial sample)	0
	50	1
	125	2
	Lot to be rejected	3

mpling plan of Table 2.1 or Table 2.2.

Initial test sample size = 3	
Sample size	Acceptance No
3 (initial sample)	0
20	1
50	2
Lot to be rejected	3

Initial tests in accordance with sa

tory accredited by a signatory to the International LAC) through their Mutual Recognition Agreement

y shall be noted on the test certificate.

LAC (MRA) bodies include the National Association of Testing Authorities and, they include International Accreditation New Zealand (IANZ).

ion test reports

verification testing results that are applicable to the product for which

information shall be included on all supplied test reports:

tion and signature of the person authorizing the report, with date of

ber of the manufacturing lot sufficient to allow traceability.

Number of items tested.

length, where relevant.

ls of the test set-up and devices used for measurement.

ng conditions (where the testing procedure allows options).

emarks concerning implementation of the tests including any special testing ons and procedures.

esults in accordance with AS/NZS 1252.1 and this Standard.

e relevant, specifications for the tensioning of the fasteners relevant to the facturing lot or assembly lot tested, as appropriate.

2.3.3.7 *Testing laboratory*

Testing shall be performed by a labora Laboratory Accreditation Corporation (I (MRA) for the tests specified in this Sta ILAC (MRA) signator

NOTE: In Australia, (NATA); in New Zeal

2.3.3.8 *Verifica*

Review of those conformity is to be esta this Standard.

The following minimum

(a) Date of testing.

(b) Printed name, posit issue.

(c) Identification numb

(d)

(e) Designation of bolts, nuts and washers.

(f) Marking of bolts, nuts and washers.

(g) Coating or surface finish.

(h) Lubrication type and condition.

(i) Test

(j) Detai

(k) Testi

(l) Any condi

(m) Test r

(n) Where manuf

(o) Conclusions.

(p) Reference to this Australian Standard, i.e. AS/NZS 1252.2.

2.3.4 Review of the verification testing process

The party responsible for establishing product conformity in accordance with this Standard will establish—

(a) compliance with the verifica… …tion testing prerequisites as defined in Clause 2.3.3.2 of this Standard; and

(b) compliance of the supplied test report(s) with the verification testing program requirements specified in Clauses 2.3.3.3 to 2.3.3.8, inclusive, as applicable to the batch(es) or product type(s) for which product conformity is required to be established.

2.3.5 Outcome of the conformity assessment process

The party responsible for establishing product conformity in accordance with this Standard will document the outcome of the review which was undertaken as described in Clause 2.3.4. Where it is established that the applicable product complies with this Standard, an attestation of product conformity shall be prepared in accordance with Clause 3.2.

Where product conformity cannot be established, the specifier shall be notified of this outcome.

SECTION 3 ATTESTATION OF PRODUCT CONFORMITY

3.1 SCOPE OF SECTION

This Section specifies the requirements for an attestation of product conformity based on the verification testing outlined in Section 2.

3.2 ATTESTATION OF PRODUCT CONFORMITY

Attestation of compliance with this Standard shall take the form of a Supplier's Declaration of Conformity (SDoC) that is applicable to the batch(es) or product type(s) for which product conformity is required to be established. The SDoC may be based, in part, upon conformity assessment to this Standard that has been carried out by a third-party product certification body; however, the verification testing component of the conformity assessment remains the responsibility of the supplier who first puts the product into the market in Australia or New Zealand.

The issued SDoC shall comply with AS ISO/IEC 17050.1 and AS ISO/IEC 17050.2, and include the following:

(a) Statement from the supplier that the bolt assembly type(s) covered by the SDoC complies with AS/NZS 1252.1 and this Standard[illegible]

ting carried out under the responsibility of

(b) Test report numbers for the verification tes the supplier.

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AS/NZS ISO
9001 Quality management systems—Requirements

ISO
3269 Fasteners—Acceptance inspection

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Standards Australia

Standards Australia is an independent company limited by guarantee, which prepares and publishes most of the voluntary technical and commercial standards used in Australia. These standards are developed through an open process of consultation and consensus, in which all interested parties are invited to participate. Through a Memorandum of Understanding with the Commonwealth government, Standards Australia is recognized as Australia's peak national standards body.

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