

STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

Amendment No. 1
to
AS/NZS 5131:2016
Structural steelwork—Fabrication and erection

REVISED TEXT

The 2016 edition of AS/NZS 5131 is amended as follows; the amendments should be inserted in the appropriate places.

SUMMARY: This Amendment applies to the Preface, Section 1 title, Clauses 1.1, 1.2, 1.4, 2.2, 3.1.101 (new), 3.1.16, 3.1.29, 3.1.32, 3.2.2, 4.1.1, 4.1.4, 4.4.4, 4.5.5 (new), 4.7.1, 4.7.2, 4.7.3, 4.7.4, 5.2.3, 5.3.1, 5.3.2, 5.5.1, 5.5.13, 5.8, 5.9, 6.1.1, 6.2, 6.3, 6.5.1, 6.6.1, 6.7.1, 6.7.2, 6.7.3, 6.7.4, 6.7.7, 7.1.1, 7.2.1, 7.2.2, 7.4.2, 7.5.2.1, 7.5.2.2, 8.2.1, 8.3, 8.4.2, 8.5.5, 8.7, 8.8.2, 8.8.4, 8.8.5, 8.8.6, 8.8.7, 8.8.8, 8.8.9, 8.8.11, 9.2.1, 9.2.3.1, 9.3.2, 9.3.4, 9.8.6, 9.9.6, 9.9.7, 9.9.10, 9.9.12, 9.9.13, 9.9.15, 9.11.1, 9.12.1, 11.1, 11.2.5, 11.5.2, 11.5.4, 11.5.5, 11.5.6, 11.5.7, 11.6.2, 11.6.4, 12.1, 12.3, 13.3.7, 13.6.2.2, 13.6.2.3, 13.7.5, 13.7.9, 13.7.10 and 13.11.4, Table 7.4, and Appendices A, B, C, D, E, F, G and I.

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Preface

Insert the following text before the last paragraph:

Amendment No. 1:2020 includes the following major changes:

- (a) Revisions throughout the document to the wording to reflect Australian Building Codes Board (ABCB) requirements for documents referenced under the National Construction Code (NCC).
- (b) Modifications to the definitions (Section 4) and application (Section 5) of traceability to better align with international practice.
- (c) Normative reference is made to AS/NZS ISO 3834 in Section 7.
- (d) Standard test for evaluation of slip factor, formerly in Appendix G, was moved back to AS 4100 and reference is made to AS 4100.

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Section 1 Title

Delete the following from the title:

‘, AND SAFETY’

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Clause 1.1

- 1 In the first line of Item (a), after ‘Hot-rolled’ *insert* the text ‘and welded’.
- 2 In Items (a), (b) and (d), *replace* ‘NZS 3404.1’ with ‘NZS 3404’.

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Clause 1.2

- 1 In Item (a)(i), *replace* ‘bins and bin support structures’ with ‘bin support structures’.
- 2 In Item (a)(ii), *delete* ‘chimneys and stacks’.
- 3 In Item (a)(xvi), *replace* ‘silos and silo supports’ with ‘silo support structures’.

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Clause 1.4

Delete Clause 1.4 title, text and notes.

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Clause 2.2

- 1 *Add* the following at the end of the list of AS documents:
5216 Design of post-installed and cast-in fastenings in concrete
- 2 *Add* the following to the list of AS/NZS ISO documents:
9606 Qualification testing of welders — Fusion welding
9606.1 Part 1: Steels
17637 Non-destructive testing of welds — Visual testing of fusion-welded joints
- 3 *Delete* the listing for SA TS 101.
- 4 *Delete* the listing for ISO 9606-1.
- 5 *Delete* the listing for NZS 3404.1 and *add* the following:
NZS
3404* Steel Structures Standard
SNZ TS
3404 Durability requirements for steel structures and components

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Clause 3.1.101 (new)

Insert the following new term and definition after Clause 3.1.12:

3.1.101 Effective firm contact area

The area within one bolt diameter of any holes but not less than 25 mm from the edge of any hole and all areas within the bolt group.

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Clause 3.1.16

Replace the definition with the following:

The condition that exists between plies in a bolted connection where the plies are solidly seated against each other, but not necessarily in continuous contact, over the effective firm contact area.

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Clause 3.1.29

Replace the text 'NZS 3404.1' with 'NZS 3404'.

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Clause 3.1.32

Replace the text 'NZS 3404.1' with 'NZS 3404'.

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Clause 3.2.2

Replace the text 'NZS 3404.1' with 'NZS 3404'.

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Clause 4.1.1

In Item (a), *replace* the text 'NZS 3404.1' with 'NZS 3404'.

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Clause 4.1.4

At the end of the second paragraph, *replace* the text ‘NZS 3404.1’ with ‘NZS 3404’.

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Clause 4.4.4

- 1 In the clause title, *replace* ‘Approval’ with ‘Review’.
- 2 In first sentence, *delete* ‘and approval’.
- 3 In second sentence, *replace* ‘shall’ with ‘should’.

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Clause 4.5.5 (new)

Insert the following new clause after Clause 4.5.4:

4.5.5 Documentation of decisions

Decisions required by this Standard should be fully documented. Copies of all relevant documentation should be retained.

In cases where a competent person’s judgement is proposed, documentation should include details of any competent persons judgement relied upon, including the extent to which the judgement was relied upon and the qualifications and experience of the person.

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Clause 4.7.1

Replace the clause text with the following:

There are three types of traceability referenced in this Standard, as follows:

- (a) Lot traceability (see Clause 4.7.2).
- (b) Piece-mark traceability (see Clause 4.7.3).
- (c) Piece traceability (see Clause 4.7.4).

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Clause 4.7.2

Replace the clause title and text with the following:

4.7.2 Lot traceability

For lot traceability, the material for a lot of identically fabricated components (main members, purlin cleats, etc.) shall be traceable back to a set of parent material test certificates, but an individual test certificate cannot be assigned to an individual piece of material within that lot of components. Material identification shall be transferred when part material is returned to stock and before further being allocated to other jobs.

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Clause 4.7.3

Replace the clause title and text with the following:

4.7.3 Piece-mark traceability

For piece-mark traceability, the raw material or fabricated component shall be traceable to the parent material test certificates at all stages through fabrication to incorporation into the works on-site, for each piece-mark, of which there may be many individual pieces. Raw material including all plate and section bought or allocated from stock for the work shall be correlated to the test certificates and incoming inspection records. Material identification shall be transferred when part material is returned to stock and before further being allocated to other jobs.

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Clause 4.7.4

Replace the clause title and text with the following:

4.7.4 Piece traceability

For piece traceability, the raw material or fabricated component shall be traceable to the parent material test certificates at all stages through fabrication to incorporation into the works on-site, for each piece of steel. Raw material including all plate and section bought or allocated from stock for the work shall be correlated to the test certificates and incoming inspection records. Material identification shall be transferred when part material is returned to stock and before further being allocated to other jobs.

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Clause 5.2.3

Replace the clause text with the following:

Types of traceability are defined in Clause 4.7.

For Australia the correlation between traceability and construction category shall be as follows:

- (a) For CC1: Test certificates shall be available for all steel material. The grade of steel shall remain identifiable for all steel material. Individual plate and section components shall be marked or otherwise designated to ensure the grade can be correlated directly with the fabrication drawing or data (see Clause 4.4.2).
- (b) For CC2: Test certificates shall be provided for all steel material. Lot traceability for main structural members, connections between main structural members and major plate components (for fabricated plate web girders and the like).
- (c) For CC3 and CC4: Test certificates shall be provided for all steel material. Lot traceability for all items (including cleats, brackets and the like). Piece or piece-mark traceability is required if so designated in the construction specification.

For New Zealand the correlation between traceability and construction category shall be as follows:

- (i) For CC1: No specific requirements
- (ii) For CC2: Test certificates shall be provided for all steel material. The grade of steel shall remain identifiable for all material. Individual plate and section components shall be marked or otherwise designated to ensure the grade can be correlated directly with the fabrication drawing or data (see Clause 4.4.2).
- (iii) For CC3 and CC4: Test certificates shall be provided for all steel material. Lot traceability shall be provided for main structural members, connections between main structural members and major plate components (for fabricated plate web girders and the like). Traceability as per Item (ii) for minor components including cleats, connecting brackets and the like.

Lot traceability shall be provided for all items (including cleats, connecting brackets and the like) if so designated in the construction specification. Piece or piece-mark traceability shall be provided if so designated in the construction specification.

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Clause 5.3.1

Replace the third paragraph with the following:

For New Zealand only, steel products and any coating shall conform to the requirements of the relevant product Standards specified in NZS 3404 and SNZ TS 3404.

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Clause 5.3.2

Delete the first paragraph.

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Clause 5.5.1

Delete the third paragraph and *replace* with the following:

Protective coatings applied to mechanical fasteners shall conform to the requirements of the relevant product Standard. If not stated therein, requirements should conform with the manufacturer's specifications.

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Clause 5.5.13

Replace the text 'SA TS 101' with 'AS 5216'.

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Clause 5.8

Replace the fourth paragraph with the following:

Special grout should be supplied with detailed instructions for use that are provided by the manufacturer and should be applied in accordance with the manufacturer's written instructions.

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Clause 5.9

In the first sentence, *replace* the word 'shall' with 'should'.

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Clause 6.1.1

Replace the third paragraph with the following:

The fabrication facility and all equipment used during the fabrication process shall be suitably maintained to ensure that use, wear and failure do not cause significant inconsistency in the manufacturing process and the requirements of this Section are consistently met.

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Clause 6.2

Replace the third, fourth and fifth paragraphs with the following:

The tracking system shall support the requirements of Clause 5.2.3 for Australia or New Zealand as appropriate.

For New Zealand only, the tracking system shall also support the following:

- (a) Identification and traceability of welders for CC3 and CC4. Traceability of welders to individual welds shall be available either by documentation (e.g. weld plan) or welder ID stamp for primary connection welds.
 - (b) Identification and traceability of welding procedures for CC3 and CC4. Documentation allowing traceability of welding procedures (WPS) and individual welds shall be available.
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Clause 6.3

In the first sentence, *replace* the word 'shall' with 'should'.
