AS/NZS 1554.3:2014
(Incorporating Amendment No. 1)

AS/NZS 1554.3:2014

Australian/New Zealand Standard™

Structural steel welding

Part 3: Welding of reinforcing steel

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This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee WD-003, Welding of Structures. It was approved on behalf of the Council of Standards Australia on 24 September 2014 and on behalf of the Council of Standards New Zealand on 12 September 2014.
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The following are represented on Committee WD-003:

Australasian Corrosion Association
Australian Chamber of Commerce and Industry
Australian Industry Group
Australian Steel Institute
Austroads
Bureau of Steel Manufacturers of Australia
Energy Networks Association
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Part 3: Welding of reinforcing steel

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee WD-003, Welding of Structures, to supersede AS/NZS 1554.3:2008.

This Standard incorporates Amendment No. 1 (November 2017). 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 a code for the welding of reinforcing steel.

This edition takes cognizance of the ISO Standards for the welding of reinforcing steels, ISO 17660-1, *Welding—Welding of reinforcing steel,* Part 1: *Load-bearing welded joints* and ISO 17660-2, *Welding—Welding of reinforcing steel,* Part 2: *Non load-bearing welded joints* and, where deemed relevant by the Committee, appropriate requirements have been incorporated or adopted with modification. Changes associated with Australia and New Zealand adopting the ISO welding consumable Standards have also been included in this edition, as have changes to maintain consistency with other parts of the AS/NZS 1554 series of Standards.

The differences from the 2008 edition of AS/NZS 1554.3 are as follows:

(a) Clarification of general requirements: Clauses 1.1, 1.4.13, 1.4.15.1, 1.6.2, 4.11, Table 4.11(A) and Figure 3.1.3.

(b) Changes associated with alignment with AS/NZS 1554.1: Clauses 1.3, 1.7, 3.1.8, 4.1, 4.2, 4.3, 4.4, 4.6.2, 5.3, 6.2.2, 6.5, 6.7, 7.2, Tables 4.7.1(A), 4.7.1(B), 5.3, and Figure 3.3.2(A).

(c) Changes to welding consumable classification Standards: Clauses 2.3.1, G4, and Tables 3.2, 4.6(A), 4.6(B).

(d) Clarification of requirements for the welding of non-loadbearing welding joints: Clause 3.3, 5.6, Tables 3.3 (new), 4.7.1(B) and 4.12.2(A) and Figure 3.3.2(B).

(e) Correction of errors and other amendments: Clauses 1.4.16, 1.9.3, 4.12.1, 4.12.2, 5.7.3, G4, Tables 4.1.2(B), 4.12.2(B), 5.3 (Title only) and Table F3.

(f) New Appendix G.

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.

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

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Part 3: Welding of reinforcing steel

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard specifies requirements for the welding of reinforcing steel used in concrete structures that are designed and constructed in accordance with AS 3600 or NZS 3101.1, as well as other Standards that may be appropriate, by the following processes:

(a) Manual metal-arc welding (MMAW).

(b) Gas metal-arc welding (GMAW).

(c) Flux-cored arc welding (FCAW).

(d) Flash butt welding.

(e) Flame-pressure welding.

(f) Other processes approved by the principal.

Provision for the MMAW, GMAW and FCAW processes is contained within the body of the Standard. Additional and specific requirements applicable to flash butt welding and flame pressure welding are set out in Appendix B and Appendix C respectively.

The Standard applies specifically to the welding of reinforcing steels complying with AS/NZS 4671, but other steels may be used as provided for in Clause 2.1. It also applies to the welding of steel connection devices, inserts, anchors and anchor details, including prefabricated assemblies required in reinforced and precast concrete constructions.

NOTES:

1 Further information is given in WTIA Technical Note 11.

2 GMAW includes waveform controlled welding such as ‘synergic’, ‘programmable’, and ‘microprocessor controlled’ processes’ e.g. pulsed spray transfer, controlled short circuit transfer.

1.2 INNOVATION

Any alternative materials, welding processes, consumables, methods of construction or testing that give equivalent results to those specified, but do not comply with the specific requirement of this Standard or are not mentioned in it, are not necessarily prohibited.

1.3 NORMATIVE REFERENCES

The documents referenced for normative purposes are listed in Appendix A.

NOTE: Documents referenced for informative purposes are listed in the Bibliography.

1.4 DEFINITIONS

For the purpose of this Standard, the symbols and definitions given in AS 1101.3, AS 2812 and those below apply.

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1.4.1 Approved

Except as may be otherwise stated, approved by the principal or the designer as appropriate.

1.4.2 Designer

The person, persons or organization responsible for the design of a structure.

1.4.3 Fabricator

The person, persons or organization responsible for executing work.

1.4.4 Inspecting authority

The authority having statutory powers to control the design and erection of buildings or structures.

NOTE: Where the structure is not subject to statutory jurisdiction, the principal is deemed to be the inspecting authority.

1.4.5 Inspector

A person employed by or acceptable to the inspecting authority or the principal for the purpose of inspecting welding in accordance with this Standard.

1.4.6 Loadbearing welded joints

See Clause 1.4.15.1.

1.4.7 May

Indicates the existence of an option.

1.4.8 Non-loadbearing welded joints

See Clause 1.4.15.2.

1.4.9 Principal

The purchaser or owner of a structure being fabricated or erected, or a nominated representative.

NOTE: Any nominated representative should be suitably qualified to deal with the technical issues of this Standard.

1.4.10 Reinforcing steel

Material complying with AS/NZS 4671 or material otherwise approved in accordance with Clause 2.1.

1.4.11 Shall

Indicates that a statement is mandatory.

1.4.12 Should

Indicates a recommendation.

1.4.13 Tack welds

A1 | See AS 2812 and Clause 5.6.

1.4.14 Types of splice

1.4.14.1 *Transverse end plate splice*

A joint between a bar and a baseplate, which is for anchoring purposes.

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