

Australian/New Zealand Standard™

Structural steel welding

Part 3: Welding of reinforcing steel



AS/NZS 1554.3:2014

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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Australian Industry Group
Australian Steel Institute
Austroads
Bureau of Steel Manufacturers of Australia
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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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S E C T I O N 1 S C O P E A N D G E N E R A L

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.