

AS/NZS 1554.1:1995

Australian/New Zealand Standard[®]

Structural steel welding

Part 1: Welding of steel structures

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This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee WD/3, Elding of Structures. It was approved on behalf of the Council of Standards Australia on 28 July 1995 and on behalf of the Council of Standards New Zealand on 7 August 1995. It was published on 5 October 1995.

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Association of Consulting Engineers, Australia
Australian Chamber of Commerce and Industry
Australian Institute of Steel Construction
AUSTROADS
Bureau of Steel Manufacturers of Australia
Electricity Supply Association of Australia
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PREFACE

This edition of this Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee WD/3, Welding of Structures, to supersede AS 1554.1—1991, NZS 4701:1981, *Metal arc welding of steel structures* and NZS 4704:1994, *Structural steel welding—Welding of steel structures*.

The objective of this Standard is to provide rules for the welding of a wide range of steel constructions and while it is expected that its main use will be for statically loaded welds, it applies also to some welds subject to fatigue. Although this Standard has been specifically prepared for steel structures, it may be usefully applied to machine frames and other types of steel constructions.

This edition incorporates the following major changes to the 1991 edition:

- (a) The scope has been expanded to provide for steel structures complying with AS 1538, *Cold-formed Steel Structures Code*, AS 4100, *Steel structures* and NZS 3404.1, *Steel structures Standard*.
- (b) Section 3 has been reviewed and updated.
- (c) Table 4.4 has been revised and expanded to include gas-tungsten arc-welding (GTAW).
- (d) Table 4.5.1(A), has been revised to accommodate GTAW consumables.
- (e) Tables 4.5.1(B) and 5.3.4 have been revised to reflect changes in Standards for steels and to accommodate other steel types and New Zealand steels.
- (f) Method for determination of preheating temperature has been revised to allow for the use of heat, ladle or product analyses where available.
- (g) Methods of radiographic examination have been reviewed.
- (h) Necessary changes have been made throughout the Standard to accommodate New Zealand conditions.

The Standard requires that weld preparations, welding consumables and welding procedures be qualified before commencement of welding. Prequalified joint preparations, welding consumables and welding procedures are also given in the Standard.

The Standard, in catering for structures subject to fatigue conditions as well as statically loaded structures, provides two categories of welds with two differing levels of weld quality assurance associated with the different types of service to which the welds are subjected. The intention is that the designer should select the category suited to the severity of the service and nominate this on the drawings; where a structure contains both categories, this will ensure that appropriate levels of supervision and inspection will be applied to the relevant parts of the structure.

Statements expressed in mandatory terms in notes to tables and figures 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.

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