AS/NZS 5131:2016
(Incorporating Amendment No. 1)

AS/NZS 5131:2016

Australian/New Zealand Standard™

Structural steelwork—Fabrication and erection

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STANDARDS Australia

STANDARDS NEW ZEALAND
PAEREWA AOTEAROA

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee BD-001, Steel Structures. It was approved on behalf of the Council of Standards Australia on 21 November 2016 and by the New Zealand Standards Approval Board on 17 November 2016.
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The following are represented on Committee BD-001:

Australian Building Codes Board
Australian Chamber of Commerce and Industry
Australian Steel Association
Australian Steel Institute
Austroads
Bureau of Steel Manufacturers of Australia
Engineers Australia
New Zealand Heavy Engineering Research Association
Rail Industry Safety and Standards Board
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This Standard was issued in draft form for comment as DR2 AS/NZS 5131:2016.

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee BD-001, Steel Structures. The objective of this Standard is to provide best practice requirements for fabrication and erection of structural steel members, components and structural assemblies used for load-carrying purposes in buildings, bridges and other structures.

This Standard incorporates Amendment No. 1 (August 2020). 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.

This Standard is based on the published joint Australian Steel Institute/Steel Construction New Zealand/Heavy Engineering Research Association (HERA) document '*Structural Steelwork Fabrication and Erection Code of Practice*', 1st edition, 2014. Reference was made to EN 1090-2:2008, *Execution of steel structures and aluminium structures*, Part 2: *Technical requirements for steel structures* in the development of this Standard.

The Standard introduces the fundamental concept of 'construction category' (CC), which is a risk-based fit-for-purpose categorization of a structure or parts thereof. It is expected the CC categorization will be implemented in other related Standards, such as AS 4100, *Steel structures*, in due course.

It is the intention of Committee BD-001 to revise AS 4100 to align with AS/NZS 5131, principally through removal of material that is covered in AS/NZS 5131 and inclusion of guidance on the assessment of the construction category in AS 4100.

In the interim development period for this Standard, the International Standards Organization (ISO) commenced development of ISO 17607, *Steel structures*, which also makes reference to EN 1090-2, *Execution of steel structures and aluminium structures*, Part 2: *Technical requirements for steel structures*. Committee BD-001 has worked to ensure alignment where possible with ISO/CD 17607.

A1 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.

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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A1 | SECTION 1 SCOPE, INCLUSIONS AND EXCLUSIONS

1.1 SCOPE

This Standard sets out minimum requirements for the construction of structural steelwork involving fabrication, preparation of steel surfaces for corrosion protection, corrosion protection comprising painting and galvanizing, erection and modification of steelwork. It applies to complete structures, individual members and components, and manufactured components pre-fabricated for inclusion in a steel structure.

This Standard specifies requirements for the construction of structural steelwork produced from the following:

A1 | (a) Hot-rolled and welded structural steel sections, flat bars and plates including those with a yield stress used in design of 690 MPa or less, which comply with one of the material Standards listed in Section 2 and which were designed using AS 4100 or AS 5100.6 or NZS 3404.

A1 |

(b) Cold-formed structural hollow sections, including hollow sections manufactured by welding, which comply with AS/NZS 1163 and which were designed using AS 4100 or AS 5100.6 or NZS 3404.

A1 |

(c) Weathering steel members and components complying with AS/NZS 3678 and AS/NZS 1594.

(d) Steel members in composite steel and concrete structures designed using AS 2327.1 or AS 5100.6 or NZS 3404, including beams, columns, composite slabs and decking.

A1 |

(e) Cold-formed purlin and girt members and decking designed using AS/NZS 4600.

This Standard applies to all types of buildings, general structures, crane runway girders, monorails, roadway bridges, rail bridges and pedestrian bridges. Its application includes complete structures, individual members and manufactured components subject to seismic actions or to fatigue.

Some requirements are expressed in terms of construction categories.

NOTE: Guidance on construction categories is provided in Appendix C.

Provisions on inspection of welding and bolting applying to New Zealand only are covered in Appendix I.

1.2 STRUCTURAL ELEMENTS INCLUDED

This Standard applies to the elements of structural steelwork that are shown and sized on the structural design drawings, essential to support the design loads and described as follows:

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