



Bridge design

Part 1: Scope and general principles



This Australian Standard® was prepared by Committee BD-090, Bridge Design. It was approved on behalf of the Council of Standards Australia on 13 March 2017. This Standard was published on 31 March 2017.

The following are represented on Committee BD-090:

- Australian Industry Group
 - Australian Steel Institute
 - Austroads
 - Bureau of Steel Manufacturers of Australia
 - Cement and Concrete Association of New Zealand
 - Cement Concrete & Aggregates Australia—Cement
 - Concrete Institute of Australia
 - Consult Australia
 - Engineers Australia
 - New Zealand Heavy Engineering Research Association
 - Rail Industry Safety and Standards Board
 - Steel Construction New Zealand
 - Steel Reinforcement Institute of Australia
 - Sydney Trains
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This Standard was issued in draft form for comment as DR AS 5100.1:2015.

Standards Australia wishes to acknowledge the participation of the expert individuals that contributed to the development of this Standard through their representation on the Committee and through the public comment period.

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Australian Standard[®]

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Part 1: Scope and general principles

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PREFACE

This Standard was prepared by the Standards Australia Committee BD-090, Bridge Design to supersede AS 5100.1—2004.

This Standard is also designated as AUSTROADS publication AP-G51.1-17.

The objectives of the AS(AS/NZS) 5100 series are to provide nationally acceptable requirements for—

- (a) the design of road, rail, light rail, pedestrian and cyclist path bridges;
- (b) the specific application of concrete, steel, timber and composite construction, which embody principles that may be applied to other materials in association with relevant Standards;
- (c) the assessment of the load capacity of existing bridges; and
- (d) the strengthening and rehabilitation of existing bridges.

The requirements of the AS(AS/NZS) 5100 series are based on the principles of structural mechanics and knowledge of material properties, for both the conceptual and detailed design, to achieve acceptable probabilities that the bridge or associated structure being designed will not become unfit for use during its design life.

Significant differences between this Standard and AS 5100.1—2004 are the following:

- (i) *Bridge barriers* The clauses for both the performance level definition and selection and design of road bridge barriers have been revised. With the increasing concerns about objects being thrown from bridge walkways and pedestrian bridges, clauses have been included for the design of appropriate restriction barriers.
- (ii) *Environmental impacts* Environmental issues that could have an impact on bridge concepts have been included to ensure their consideration in the design process.
- (iii) *Collision protection* The clauses for collision from rail traffic have been revised to bring the loading in line with international practice, and to clarify the requirements.

In line with Standards Australia policy, the words ‘shall’ and ‘may’ are used consistently throughout this Standard to indicate respectively, a mandatory provision and an acceptable or permissible alternative.

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

The term ‘informative’ has been used in this Standard to define the application of the appendix to which it applies. An ‘informative’ appendix is only for information and guidance.

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