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AS 5100.4:2017
(Incorporating Amendment No. 1)

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Bridge design

Part 4: Bearings and deck joints

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AS 5100.4:2017

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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
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Preface

This Standard was prepared by the Standards Australia Committee BD-090, Bridge Design to supersede AS 5100.4—2004.

This Standard is also designated as Austroads publication AP-G51.4-17.

This Standard incorporates Amendment No. 1 (December 2023). The start and end of changes introduced by the Amendment are indicated in the text by tags including the Amendment number 1.

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

(a) the design of road, rail, pedestrian and cyclist-path bridges;

(b) the specific application of concrete, steel and composite steel/concrete construction, which embody principles that may be applied to other materials in association with relevant Standards; and

(c) the assessment of the load capacity of existing bridges.

The objective of this Part (AS 5100.4) is to specify requirements for the design and selection of bearings and deck joints for bridges in Australia.

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.

Whereas earlier editions of the Bridge design series were essentially administered by the infrastructure owners and applied to their own inventory, an increasing number of bridges are being built under the design-construct-operate principle and being handed over to the relevant statutory authority after several years of operation. This Standard includes clauses intended to facilitate the specification to the designer of the functional requirements of the owner, to ensure the long-term performance and serviceability of the bridge and associated structure.

Significant differences between this Standard and AS 5100.4—2004 are the following:

(i) Tables of standard elastomeric bearing properties have all been updated to add additional numbers of elastomer layers in each plan size.

(ii) The requirements for the sealing rings of pot bearing have been modified.

(iii) Spherical advanced composite material bearings have been introduced.

(iv) The movement range deck joints need to be designed for have been modified.

(v) Load distribution from bearings to concrete surfaces has been introduced.

(vi) Project-specific requirements (Appendix E) have been added.

(vii) Provisions for modular bridge expansion joints (MBEJ) have been added.

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.

[Text deleted.]

The terms 'normative' and 'informative' have been used in this Standard to define the application of the appendix to which it applies. A 'normative' appendix is an integral part of the Standard. An 'informative' appendix is only for information and guidance.

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