AS 5100.4 Supplement 1—2006

Bridge design—Bearings and deck joints—Commentary (Supplement to AS 5100.4—2004)

STANDARDS Australia
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- Bureau of Steel Manufacturers of Australia
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Bridge design—Bearings and deck joints—Commentary (Supplement to AS 5100.4—2004)

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PREFACE

This Commentary was prepared by the Standards Australia Committee BD-090, Bridge Design, to supersede HB 77.4 Supp 1—1996, *Australian Bridge Design Code—Bearings and Deck Joints—Commentary (Supplement to SAA HB 77.4—1996)*.

The objective of this Commentary is to provide users with background information and guidance to AS 5100.4—2004.

The Standard and Commentary are intended for use by bridge design professionals with demonstrated engineering competence in their field.

In this Commentary, AS 5100.4 is referred as 'the Standard'.

The clause numbers and titles used in this Commentary are the same as those in AS 5100.4, except that they are prefixed by the letter 'C'. To avoid possible confusion between the Commentary and the Standard, a Commentary clause is referred to as 'Clause C……' in accordance with Standards Australia policy.

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C1 SCOPE

The Standard provides minimum requirements for the selection, design and specification of pot, elastomeric and mechanical bearings, plane sliding contact surfaces and deck joints for use in bridge structures. The Standard supersedes the Austroads Bridge Design Code ABDC—1992 (HB 77.4) and AS 1523—1981. It is also a useful reference and guide for the selection, design and specification of bearings in buildings and other structures.

Guidelines for bearings subject to uplift are included.

PTFE lined aluminium alloy spherical bearings are not included due to their low horizontal load capacity and concern about the extrusion of the bonded PTFE rotating layer.

While the preferred types of bearings for use in bridges are elastomeric and pot bearings, the Standard does not preclude the use of other types of bearings.

There are also new appendices covering standard laminated elastomeric sizes, the testing of elastomer, manufacturing tolerances, and the testing of completed bearings.

For further information, see NAASRA (1976) (Ref. 1).

C2 REFERENCED DOCUMENTS

The Standards listed in the Clause are subject to revision from time to time and the current edition should always be used. The currency of any Standard may be checked with Standards Australia.

C3 DEFINITIONS

Technical definitions are provided in the Clause. Some technical definitions that are applicable to only one Clause are given in that Clause in which they are relevant.

C4 NOTATION

The basis of the notation is generally in accordance with ISO 3898, *Bases for design of structures—Notations—General symbols*. Standards Australia's policy is to use ISO recommendations on notation wherever practicable in structural design standards such as AS/NZS 1170 series and AS 4100.

The symbols for shear force, H and H^* (for serviceability limit state and ultimate limit state respectively), are used rather than V and V^*, purely because V was used for compression in the superseded HB 77.4—1996.

For bearing schedules, it is sometimes convenient to add the following subscripts:

(a) ULS = ultimate limit state

(b) SLS = serviceability limit state

(c) coex = coexistent (e.g., $N^*_{\text{min., coex}}$ is the coexistent ULS minimum compression load associated with other design load effects)

(d) lon = longitudinal (e.g., H^*_{lon} is the ULS longitudinal shear load)

