AS 5100.7 Supp 1—2006

AS 5100.7 Supplement 1—2006

Bridge design—Rating of existing bridges—Commentary (Supplement to AS 5100.7—2004)

STANDARDS Australia
AUSTRALASIAN RAILWAY ASSOCIATION INC
AUSTROADS

This Australian Standard Supplement was prepared by Committee BD-090, Bridge Design. It was approved on behalf of the Council of Standards Australia on 8 May 2006.
This Supplement was published on 6 July 2006.

The following are represented on Committee BD-090:

- Austroads
- Association of Consulting Engineers Australia
- Australasian Railway Association
- Bureau of Steel Manufacturers of Australia
- Cement Concrete & Aggregates Australia—Concrete
- Engineers Australia
- Queensland University of Technology
- Steel Reinforcement Institute of Australia
- University of Western Australia

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 public comment period.

Keeping Standards up-to-date

Australian Standards® are living documents that reflect progress in science, technology and systems. To maintain their currency, all Standards are periodically reviewed, and new editions are published. Between editions, amendments may be issued.

Standards may also be withdrawn. It is important that readers assure themselves they are using a current Standard, which should include any amendments that may have been published since the Standard was published.

Detailed information about Australian Standards, drafts, amendments and new projects can be found by visiting **www.standards.org.au**

Standards Australia welcomes suggestions for improvements, and encourages readers to notify us immediately of any apparent inaccuracies or ambiguities. Contact us via email at **mail@standards.org.au**, or write to Standards Australia, GPO Box 476, Sydney, NSW 2001.

AS 5100.7 Supplement 1—2006

Bridge design—Rating of existing bridges—Commentary (Supplement to AS 5100.7—2004)

First published as HB 77.7 Supp 1—1996.
Revised and redesignated as AS 5100.7 Supp 1—2006.

Published by Standards Australia, GPO Box 476, Sydney, NSW 2001, Australia

ISBN 0 7337 7505 5

PREFACE

This Commentary was prepared by the Standards Australia Committee BD-090, Bridge Design to supersede HB 77.7 Supp 1—1996, *Australian Bridge Design Code—Rating Code—Commentary (Supplement to SAA HB 77.7—1996)*.

The objective of this Commentary is to provide users with background information and guidance to AS 5100.7—2004.

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

In this Commentary, AS 5100.7—2004 is referred as the 'Standard'.

The clause numbers and titles used in this Commentary are the same as those in AS 5100.7, except that they are prefix 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.

CONTENTS

STANDARDS AUSTRALIA

Australian Standard

Bridge design—Rating of existing bridges—Commentary (Supplement to AS 5100.7—2004)

C1 SCOPE AND GENERAL

C1.1 Scope

The Standard applies to the rating of road, rail and pedestrian/bicycle path bridges. The calculation of an acceptable rating for a bridge is to be determined in accordance with the requirements of the relevant authority. Specific consideration needs to be given to the categories of vehicles and the operating conditions for which the rating is being determined.

C1.2 General

Designers should recognize that the process of rating involves taking account of factors which can be defined in specific existing bridges, or for specific loadings, but which cannot be assumed in the design process. Rating does not imply any change in the design approach that is to be employed in the assessment of bridges, but it recognizes the components for which the load factors and capacity reduction factors make an allowance. It is permissible to take account of the fact that some of these components may be able to be specified more accurately in a specific case, and that as a result it may be reasonable to modify the factors.

A new bridge will by default have a rating of its design loads, which may then be modified as a result of specific consideration of its construction, loadings and condition.

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 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, AS 2327 series, AS 3600, AS 4100 and AS/NZS 4600.

C4 RATING PHILOSOPHY

C4.1 General

Rating of bridges is based on the same principles and philosophy as the design of new bridges, as specified in AS 5100.1.

Rating bridges against current road, rail or pedestrian design loading provides a simple numerical method of comparing the assessed load capacity of new and existing structures with current design capacity standards. It also assists in making a comparison against earlier design capacity standards and enables a relative ranking of the strength of structures.

