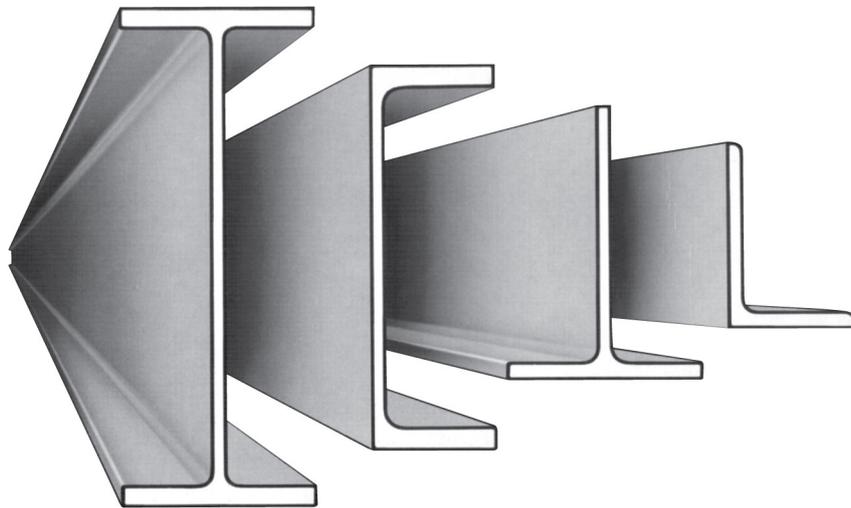




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design capacity tables for structural steel



Volume 1: Open Sections fourth edition (2009)

WB, WC – Grade 300/400 (to AS/NZS 3679.2)

UB, UC – Grade 300 (to AS/NZS 3679.1)

TFB, PFC – Grade 300 (to AS/NZS 3679.1)

BT, CT – Grade 300 (to AS/NZS 3679.1#)

EA, UA – Grade 300 (to AS/NZS 3679.1)

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**Design Capacity Tables for Structural Steel
Volume 1: Open Sections**

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TABLE OF CONTENTS

	Pages
Foreword	iv
Acknowledgements	iv
Preface	v
Notation	vi
PART 1 Introduction	1-1 to 1-4
PART 2 Materials	2-1 to 2-6
PART 3 Section Properties	3-1 to 3-40
PART 4 Methods of Structural Analysis	4-1 to 4-10
PART 5 Members Subject to Bending	5-1 to 5-58
PART 6 Members Subject to Axial Compression	6-1 to 6-44
PART 7 Members Subject to Axial Tension	7-1 to 7-16
PART 8 Members Subject to Combined Actions	8-1 to 8-42
PART 9 Connections	9-1 to 9-20
PART 10 Detailing Parameters	10-1 to 10-18
PART 11 Plates	11-1 to 11-14
PART 12 Rails	12-1 to 12-2
PART 13 Crane Runway Beams and Monorail Beams	13-1 to 13-4

Foreword

This publication has been prepared by the Australian Steel Institute. The ASI is the nation's peak body representing and serving the steel industry. The ASI achieves industry and professional development by conducting regular seminars, publishing technical manuals available through its own bookshop, operating the largest steel industry library in the Southern Hemisphere, by delivering guest lectures at colleges and universities, and hosting a range of national and state-based committees providing cross-industry representation.

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Preface

This fourth edition of the Design Capacity Tables for Structural Steel – Vol 1 (DCTv1) is a design aid to the limit states Standard AS 4100-1998: Steel Structures – published by Standards Australia. The DCTv1 only considers standard open type hot-rolled sections and standard open sections manufactured from hot-rolled plate.

The general term “open” is used to differentiate such sections from structural steel hollow sections. As noted in the previous editions, the AISC Design Capacity Tables for Structural Steel (DCT) series of publications have been split into volumes – i.e. Volume 1 considers open sections, Volume 2 considers hollow sections, Volume 3 considers simple connections to open sections while Volume 4 considers rigid connections to open sections.

The second edition of the DCTv1 reflected a change in the base grade of steel from Grade 250 to Grade 300 for most standard open sections. This left some sections (Taper Flange Beams, smaller Equal/Unequal Angles and Taper Flange Channels) listed as Grade 250 sections as the source Australian mill was still producing such sections in this grade at the time of publication. In 1997, Addendum Number 1 to the second edition of DCTv1 was released to reflect the change in these remaining sections from Grade 250 to Grade 300.

The third edition of DCTv1 combined the previous Grade 300/250 edition and its Addendum. Consequently, apart from the higher strength Grade 400 Welded Beams/Columns, all the currently specified hot-rolled structural steel sections were now listed in one edition as Grade 300. Additionally, this edition considered the changes incorporated into the 1998 version of AS 4100, general updating of information and alignment to a common format which is consistent with Volume 2.

For the fourth edition, rewriting of parts of the introductory text to each Part has been undertaken for reasons of updating and clarification. In Part 2, updating of Table T2.3 was necessary to reflect current supply arrangements while extensive re-writing of Part 4 was undertaken to make the section clearer and to align one example with a separately published example. In Part 3, tables of section properties with holes in one flange have been deleted since they are now incorporated in Design Guide 13 – Splice Connections where the information is directly relevant in the design of cover plate splices. In Part 8, the tables for eccentrically loaded single angles in trusses have been deleted, with a view to publishing these separately with additional explanatory material. Part 9 and Part 10 have been extensively re-written to reflect the recent publication of the Connection Series Part 1 (Simple Connections – 2007) and Part 2 (Rigid Connections – 2009). Part 10 has had some material deleted that is now covered in Connection Series Part 1. Parts 11 and 12 have been revised to reflect current material supply arrangements.

T.J. Hogan – Editor for Revisions, Fourth Edition

A.A. Syam – Editor, all Editions

August 2009