# Australian Standard™

AI Cranes, hoists and winches

Part 18: Crane runways and monorails



This Australian Standard was prepared by Committee ME-005, Cranes. It was approved on behalf of the Council of Standards Australia on 8 December 2000 and published on 16 February 2001.

The following are represented on Committee ME-005:

Association of Consulting Engineers, Australia

Australian Chamber of Commerce and Industry

Australian Elevator Association

Australian Institute of Building

Australian Institute for Non-destructive Testing

Bureau of Steel Manufacturers of Australia

Construction and Mining Equipment Association of Australia

Crane Industry Council of Australia

Department of Defence (Commonwealth)

Department of Training and Industrial Relations, Qld

Department for Industrial Affairs, S.A.

Institution of Engineers, Australia

Metal Trades Industry Association of Australia

University of New South Wales

Victorian WorkCover Authority, Health and Safety Division

WorkCover, N.S.W.

Work Health Authority, N.T.

Workplace Standards Authority, Tas.

WorkSafe, W.A.

#### Keeping Standards up-to-date

Standards are living documents which 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 Standards may also be withdrawn.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 which may have been published since the Standard was purchased.

Detailed information about Standards can be found by visiting the Standards Australia web site at <a href="https://www.standards.com.au">www.standards.com.au</a> and looking up the relevant Standard in the on-line catalogue.

Alternatively, the printed Catalogue provides information current at 1 January each year, and the monthly magazine, *The Australian Standard*, has a full listing of revisions and amendments published each month.

We also welcome suggestions for improvement in our Standards, and especially encourage readers to notify us immediately of any apparent inaccuracies or ambiguities. Contact us via email at mail@standards.com.au, or write to the Chief Executive, Standards Australia International Ltd, GPO Box 5420, Sydney, NSW 2001.

AS 1418.18-2001

(Incorporating Amendment Nos 1 and 2)

## Australian Standard™

<sup>A1</sup> | Cranes, hoists and winches

Part 18: Crane runways and monorails

First published as AS 1418.18—2001. Reissued incorporating Amendment No. 1 (March 2003). Reissued incorporating Amendment No. 2 (November 2003).

#### **COPYRIGHT**

© Standards Australia International

All rights are reserved. No part of this work may be reproduced or copied in any form or by any means, electronic or mechanical, including photocopying, without the written permission of the publisher.

Published by Standards Australia International Ltd GPO Box 5420, Sydney, NSW 2001, Australia ISBN 0 7337 3725 0

#### **PREFACE**

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee ME-005, Cranes.

This Standard incorporates Amendment No. 1 (March 2003) and Amendment No. 2 (November 2003). The changes required by the Amendment are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure or part thereof affected.

This Standard is a result of a consensus among representatives on the Joint Committee to produce it as an Australian Standard.

Runway girders are the subject of much debate relating to their method of design, as some people regard them as a part of the building structure that houses and supports the crane and others regard them as an integral part of the crane. This Standard allows for the design of runway girders by either limit states or permissible stress methods to allow their design by those engineers who favour either method. However, in choosing to design the runway girders by one method, the designer must use that exclusively throughout the design.

This Standard has been introduced in recognition that there is currently little guidance given to aid designers in designing runway girders. It is intended that the Standard will give direction on the correct implementation of the appropriate structural design Standards with a view to producing a uniform design method for crane runways and monorails.

The term 'normative' has been used in this Standard to define the application of the appendix to which it applies. A 'normative' appendix is an integral part of a Standard.

### CONTENTS

		Page
SECTIO	ON 1 SCOPE AND GENERAL	
1.1	SCOPE AND APPLICATION	5
1.2	NEW DESIGNS AND INNOVATIONS	
1.3	INTERPRETATIONS	
1.4	REFERENCED DOCUMENTS	
1.5	DEFINITIONS	
SECTIO	ON 2 MATERIALS	
2.1	YIELD STRESS AND TENSILE STRENGTH	Q
2.1	ACCEPTANCE OF STEEL	
2.2	UNIDENTIFIED STEEL	
2.3	WELDS AND WELD CATEGORIES	
2.5	LAMELLAR INCLUSIONS	
2.3	LAMELLAK INCLUSIONS	0
	ON 3 CLASSIFICATION OF RUNWAY GIRDERS	
3.1	SCOPE OF SECTION	
3.2	CLASSIFICATION OF CRANE RUNWAYS	
3.3	UTILIZATION CLASS	
3.4	LOCAL UTILIZATION CLASS	9
SECTIO	N 4 LOADS AND LOAD COMBINATIONS	
4.1	SCOPE OF SECTION	
4.2	CATEGORIZATION OF CRANE LOADS	10
4.3	DETERMINATION OF LOADS	10
4.4	LOAD COMBINATIONS	11
SECTIO	ON 5 DESIGN OF RUNWAY GIRDERS	
5.1	GENERAL	13
5.2	FORMS OF CONSTRUCTION	
5.3	APPLICATION OF CRANE LOADS	
5.4	METHODS OF ANALYSIS	
5.5	VERIFICATION OF STRENGTH ADEQUACY	
5.6	METHOD OF DESIGN	
5.7	DETAIL DESIGN OF GIRDER WEBS AND FLANGES	
5.8	GIRDER SUPPORT	
5.9	BOX GIRDERS AND COMPOUND GIRDERS	24
5.10	LATTICED RUNWAY GIRDERS	25
5.11	END BUFFER STOPS	25
	MONORAIL BEAMS	
5.13		
SECTIO	ON 6 VERIFICATION OF FATIGUE LIFE	
6.1	GENERAL	31
6.2	FATIGUE STRENGTH	
6.3	METHOD OF VERIFICATION	
	LATTICED STRUCTURES	
6.5	LOCAL AREAS	
SECTIO	N 7 CRANE RAIL AND RAIL ACCESSORIES	34



	This is a free preview.	Purchase the e	entire publication	at the link below:
--	-------------------------	----------------	--------------------	--------------------

**Product Page** 

- Dooking for additional Standards? Visit Intertek Inform Infostore
- Dearn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation