AS 1418.5—2002 (Incorporating Amendment No. 1)

# Australian Standard<sup>™</sup>

### Cranes, hoists and winches

Part 5: Mobile cranes



This Australian Standard was prepared by Committee ME-005, Cranes. It was approved on behalf of the Council of Standards Australia on 11 July 2002. This Standard was published on 15 October 2002.

The following are represented on Committee ME-005: Association of Consulting Engineers Australia Australian Elevator Association Australian Industry Group 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 for Administrative and Information Services (South Australia) Department of Consumer and Employment Protection, WorkSafe Division (W.A.) Department of Industrial Relations (Qld) Department of Infrastructure, Energy and Resources (Tasmania) Institution of Engineers Australia State Chamber of Commerce Victorian WorkCover Authority WorkCover New South Wales

#### 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 Standards may also be withdrawn.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 Web Shop at www.standards.com.au 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 Global Standard*, has a full listing of revisions and amendments published each month.

Australian Standards<sup>TM</sup> and other products and services developed by Standards Australia are published and distributed under contract by SAI Global, which operates the Standards Web Shop.

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.org.au, or write to the Chief Executive, Standards Australia International Ltd, GPO Box 5420, Sydney, NSW 2001.

This Standard was issued in draft form for comment as DR 00396.

AS 1418.5—2002 (Incorporating Amendment No. 1)

## Australian Standard<sup>™</sup>

### Cranes, hoists and winches

## Part 5: Mobile cranes

Originated as AS 1418.5—1980. Previous edition 1995. Fifth edition 2002. Reissued incorporating Amendment No. 1 (August 2004)

#### 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 4727 2 2

#### PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee ME-005, Cranes, to supersede AS 1418.5—1995, Cranes (including hoists and winches) Part 5: Mobile and vehicle-loading cranes.

This Standard incorporates Amendment No. 1 (August 2004). 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.

After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this Standard as an Australian Standard rather than an Australian/New Zealand Standard.

The objective of this Standard is to set out requirements for the design of mobile cranes for reference by mobile crane designers, users and regulators.

This edition incorporates the following changes:

- (a) Requirements for earth moving equipment used as cranes and side-boom pipelayers have been removed from the scope of this document and have been added to the scope of AS 1418.8 by amendment.
- (b) It is intended that requirements for vehicle-mounted loading cranes will appear in a separate part of AS 1418. All requirements pertaining thereto have been moved to Section 13, which will be superseded by the new Part when it is published.

Reference is made in Clause 9.4 to ISO 4305:1991 giving an allowable alternative for static stability test loads. Reference to a Standard without a date means that the latest Standard is referenced at the time of reading, however, in this case, where this alternative is chosen, the 1991 version of ISO 4305 is to be used.

The terms 'normative' and 'informative' have been used in this Standard to define the application of the appendix to which they apply. A 'normative' appendix is an integral part of a Standard, whereas an 'informative' appendix is only for information and guidance.

3

### CONTENTS

#### Page

| SECTIO | ON 1 SCOPE AND GENERAL                   |     |
|--------|--|-----|
| 1.1    | SCOPE                                    | . 5 |
| 1.2    | REFERENCED DOCUMENTS                     | . 5 |
| 1.3    | DEFINITIONS                              | . 6 |
| 1.4    | NEW DESIGN AND INNOVATIONS               | . 6 |
| SECTIO | DN 2 CLASSIFICATION AND LOAD RATING      |     |
| 2.1    | CLASSIFICATION OF CRANE                  | , 7 |
| 2.2    | RATED CAPACITY                           | . 7 |
| SECTIO | DN 3 CRANE LOADS                         |     |
| 3.1    | LOADINGS                                 | 8   |
| 3.2    | LOAD COMBINATIONS                        |     |
| 3.3    | WIND LOADS                               |     |
| SECTIO | DN 4 STRUCTURE DESIGN                    |     |
| 4.1    | BASIS OF DESIGN                          | . 9 |
| 4.2    | CARRIER                                  | . 9 |
| 4.3    | CRAWLER CRANE TRAVEL MECHANISM           | . 9 |
| 4.4    | BOOMS AND JIBS                           | 10  |
| 4.5    | OUTRIGGERS/STABILIZERS                   |     |
| 4.6    | COUNTERWEIGHTS                           |     |
| 4.7    | SLEWING SUPERSTRUCTURE RESTRAINT         |     |
| SECTIO | DN 5 CRANE MECHANISMS                    |     |
| 5.1    | LUFFING MECHANISM                        | 11  |
| 5.2    | HOISTING MECHANISM                       | 11  |
| 5.3    | SLEWING MECHANISM                        | 11  |
| 5.4    | BOOM EXTENSION MECHANISM                 | 11  |
| 5.5    | RATCHET WHEELS AND PAWLS                 | 11  |
| 5.6    | BRAKES                                   |     |
| 5.7    | CHAIN DRIVES                             |     |
| SECTIO | N 6 REEVED ROPE AND FIXED ROPE SYSTEMS   |     |
| 6.1    | MATERIALS AND COMPONENTS                 | 13  |
| 6.2    | REEVED ROPE SYSTEMS                      | 13  |
| 6.3    | FIXED ROPE SYSTEMS                       | 14  |
|        | ON 7 OPERATIONAL DESIGN                  |     |
| 7.1    | CONTROLS AND INDICATORS                  |     |
| 7.2    | TELESCOPIC BOOM CONTROL                  |     |
| 7.3    | INDICATING AND LIMITING DEVICES          | 15  |
| SECTIO | ON 8 CABINS, ACCESS, MANUALS AND MARKING |     |
| 8.1    | CABINS                                   |     |
| 8.2    | ACCESS, GUARDS AND RESTRAINTS            | 19  |
| 8.3    | MARKING                                  |     |
| 8.4    | ACCESS FOR RIGGING AND SERVICING         | 19  |
| 8.5    | MANUALS                                  | 19  |



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

**Product Page** 

S Looking for additional Standards? Visit Intertek Inform Infostore

> Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation