

Australian Standard™

**Cranes, hoists and winches**

**Part 11: Vehicle-loading cranes**

This Australian Standard was prepared by Committee ME-005, Cranes. It was approved on behalf of the Council of Standards Australia on 14 May 2004. This Standard was published on 12 July 2004.

---

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 Industrial Relations (Qld)
- Department of Infrastructure, Energy and Resources (Tasmania)
- Department of Labour New Zealand
- Institution of Engineers Australia
- State Chamber of Commerce
- University of New South Wales
- Victorian WorkCover Authority
- WorkCover New South Wales
- WorkSafe Western Australia

---

### **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 Standards may also be withdrawn.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](http://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™ 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](mailto:mail@standards.org.au), or write to the Chief Executive, Standards Australia International Ltd, GPO Box 5420, Sydney, NSW 2001.

---

Australian Standard™

**Cranes, hoists and winches**

**Part 11: Vehicle-loading cranes**

First published as AS 1418.11—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 6164 X

## PREFACE

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

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 provide requirements for vehicle-loading cranes.

This Standard is based on EN 12999, *Cranes—Safety—Loader cranes*.

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.

Appendix D has been included due to the manufacture of vehicle-loading cranes being principally outside Australia using materials not covered by AS 3990, *Mechanical equipment—Steelwork*.

## CONTENTS

	<i>Page</i>
SECTION 1 SCOPE AND GENERAL	
1.1 SCOPE .....	4
1.2 APPLICATION .....	4
1.3 REFERENCED DOCUMENTS .....	4
1.4 NEW DESIGNS AND INNOVATIONS .....	5
1.5 DEFINITIONS .....	5
1.6 TERMINOLOGY .....	5
SECTION 2 DESIGN REQUIREMENTS	
2.1 STRUCTURAL CALCULATION.....	9
2.2 MECHANICAL ARRANGEMENTS.....	14
2.3 HYDRAULIC SYSTEM .....	15
2.4 LIMITING AND INDICATING DEVICES .....	17
2.5 CONTROLS .....	20
2.6 CONTROL STATIONS .....	21
2.7 INSTALLATION/MOUNTING .....	23
2.8 FITMENT OF ADDITIONAL FUNCTIONS.....	24
SECTION 3 VERIFICATION OF THE DESIGN REQUIREMENTS AND MEASURES	
3.1 GENERAL .....	25
3.2 TESTING AND PROCEDURES.....	27
3.3 RECORD OF TESTING.....	28
3.4 REPAIRS.....	28
SECTION 4 MANUALS AND MARKING	
4.1 GENERAL .....	29
4.2 MANUALS .....	29
4.3 SERVICE RECORD.....	31
4.4 PARTS BOOK .....	31
4.5 MARKING .....	31
APPENDICES	
A LIST OF SIGNIFICANT HAZARDS.....	35
B EXAMPLES OF CONFIGURATIONS AND MOUNTINGS.....	37
C EXAMPLES OF RAISED CONTROL STATIONS .....	41
D RATED CAPACITY LIMITER .....	43
E EXAMPLES OF MOTIONS THAT INCREASE LOAD MOMENT .....	44
F SYMBOLS FOR WORKING AND SETTING-UP FUNCTIONS .....	45
G CONTROL SYSTEM—HORIZONTAL LAYOUT ORDER .....	46
H CONTROL SYSTEM—PREFERRED VERTICAL LAYOUT FOR CONTROLS OPERATED FROM THE GROUND .....	48
I CONTROL LEVERS FOR HIGH SEATS AND REMOTE CONTROLS.....	50
J MINIMUM INTERNAL DIMENSIONS FOR CABINS FITTED ON VEHICLE-LOADING CRANES.....	52
K DETERMINATION OF RATED CAPACITY INDICATOR/LIMITER ACCURACY .....	53

## STANDARDS AUSTRALIA

**Australian Standard**  
**Cranes, hoists and winches**

**Part 11: Vehicle-loading cranes**

## SECTION 1 SCOPE AND GENERAL

**1.1 SCOPE**

This Standard specifies minimum requirements for the design, calculation, examination and testing of powered vehicle-loading cranes (VLCs) and their mountings, as defined in AS 2549. It also covers requirements for cranes primarily designed to be used as vehicle-loading cranes that are mounted on a static foundation.

NOTE: The hazards covered by this Standard are identified in Appendix A.

This Standard does not apply to statically mounted vehicle-loading cranes used on board ships, or manually operated VLCs.

**1.2 APPLICATION**

This Standard is complementary to AS 1418.1, but the requirements given herein take precedence over the corresponding requirements in AS 1418.1.

**1.3 REFERENCED DOCUMENTS**

## AS

- |         |   |
|---------|---|
| 1418    | Cranes hoists and winches                               |
| 1418.1  | Part 1: General requirements                            |
| 2549    | Cranes (including hoists and winches)—Glossary of terms |
| 2550    | Cranes, hoists and winches—Safe use                     |
| 2550.1  | Part 1: General requirements                            |
| 2550.11 | Part 11: Vehicle-loading cranes                         |
| 4024    | Safeguarding of machinery                               |
| 4024.1  | Part 1: General principles                              |

## EN

- |       |                             |
|-------|-----------------------------|
| 12999 | Cranes—Safety-Loader cranes |
|-------|-----------------------------|

## ISO

- |         |                                      |
|---------|--------------------------------------|
| 4302    | Cranes—Wind load assessment          |
| 1600    | Cranes—Access, guards and restraints |
| 11050-2 | Part 2: Mobile cranes                |
| 8566    | Cranes—Cabins                        |
| 8566-2  | Part 2: Mobile cranes                |

## National Code of Practice

- |       |   |
|-------|---|
| VSB 6 | Heavy Vehicle Modifications, Section Q: Truck mounted lifting systems—Slewing |
|-------|---|