

Australian/New Zealand Standard[®]

**Cranes (including hoists and
winches)**

Part 9: Vehicle hoists

AS/NZS 1418.9:1996

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee ME/5, Cranes. It was approved on behalf of the Council of Standards Australia on 15 May 1996 and on behalf of the Council of Standards New Zealand on 22 May 1996. It was published on 5 October 1996.

The following interests are represented on Committee ME/5:

Association of Consulting Engineers, Australia
Australian Chamber of Commerce and Industry
Australian Institute of Building
Bureau of Steel Manufacturers of Australia
Construction and Mining Equipment Association of Australia
Crane Industry Council of Australia
Department of Defence (Commonwealth)
Department of Labour, S.A.
Department of Labour, New Zealand
Department of Training and Industrial Relations, Qld
Institution of Engineers, Australia
Lift Manufacturers Association of Australia
Metal Trades Industry Association of Australia
University of New South Wales
Victorian Work Cover Authority
WorkCover, N.S.W.
Work Health Authority, N.T.
Work Safe, W.A.
Workplace Standards Authority, Tasmania

Additional interests participating in preparation of Standard:

Manufacturing and Retailing Interests
Motor Trade Association of New Zealand
Motor Trade Association of South Australia

Review of Standards. To keep abreast of progress in industry, Joint Australian/New Zealand Standards are subject to periodic review and are kept up to date by the issue of amendments or new editions as necessary. It is important therefore that Standards users ensure that they are in possession of the latest edition, and any amendments thereto.

Full details of all Joint Standards and related publications will be found in the Standards Australia and Standards New Zealand Catalogue of Publications; this information is supplemented each month by the magazines 'The Australian Standard' and 'Standards New Zealand', which subscribing members receive, and which give details of new publications, new editions and amendments, and of withdrawn Standards.

Suggestions for improvements to Joint Standards, addressed to the head office of either Standards Australia or Standards New Zealand, are welcomed. Notification of any inaccuracy or ambiguity found in a Joint Australian/New Zealand Standard should be made without delay in order that the matter may be investigated and appropriate action taken.

Australian/New Zealand Standard[®]

Cranes (including hoists and winches)

Part 9: Vehicle hoists

PUBLISHED JOINTLY BY:

STANDARDS AUSTRALIA
1 The Crescent,
Homebush NSW 2140 Australia

STANDARDS NEW ZEALAND
Level 10, Radio New Zealand House,
155 The Terrace,
Wellington 6001 New Zealand

PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee ME/5 on Cranes. It covers specific requirements for vehicle hoists and is to be read in conjunction with AS 1418.1, *Cranes (including hoists and winches)*, Part 1: *General requirements*.

The purpose of this Standard is to establish uniformity in engineering practice and regulations for vehicle hoists. It has been prepared with the objective of meeting the minimum requirements for safety and with due regard to the undesirability of imposing restrictions on design. Where in respect of any appliance the minimum requirements specified are considered to be insufficient to meet working conditions, appropriate increases shall be made.

This edition is a revision of the 1986 edition, amended to remove misunderstandings and discrepancies in that Standard.

In the preparation of this Standard, cognizance was taken of comparable current Standards in Europe and the United States of America.

The term 'informative' has been used in this Standard to define the application of the appendix to which it applies. An 'informative' appendix is only for information and guidance.

© Copyright — STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

Users of Standards are reminded that copyright subsists in all Standards Australia and Standards New Zealand publications and software. Except where the Copyright Act allows and except where provided for below no publications or software produced by Standards Australia or Standards New Zealand may be reproduced, stored in a retrieval system in any form or transmitted by any means without prior permission in writing from Standards Australia or Standards New Zealand. Permission may be conditional on an appropriate royalty payment. Australian requests for permission and information on commercial software royalties should be directed to the head office of Standards Australia. New Zealand requests should be directed to Standards New Zealand.

Up to 10 percent of the technical content pages of a Standard may be copied for use exclusively in-house by purchasers of the Standard without payment of a royalty or advice to Standards Australia or Standards New Zealand.

Inclusion of copyright material in computer software programs is also permitted without royalty payment provided such programs are used exclusively in-house by the creators of the programs.

Care should be taken to ensure that material used is from the current edition of the Standard and that it is updated whenever the Standard is amended or revised. The number and date of the Standard should therefore be clearly identified.

The use of material in print form or in computer software programs to be used commercially, with or without payment, or in commercial contracts is subject to the payment of a royalty. This policy may be varied by Standards Australia or Standards New Zealand at any time.

CONTENTS

	<i>Page</i>
SECTION 1 SCOPE AND GENERAL	
1.1 SCOPE	5
1.2 NEW DESIGN AND INNOVATIONS	5
1.3 TYPES	5
1.4 REFERENCED DOCUMENTS	6
1.5 DEFINITIONS	7
1.6 RATING VALUES	7
1.7 RATED CAPACITY	7
1.8 RANGE OF HOISTING	7
1.9 WORKING VELOCITIES	7
1.10 TEST CERTIFICATE	7
1.11 MARKING	8
SECTION 2 DESIGN	
2.1 BASIS OF DESIGN	9
2.2 CLASSIFICATION	9
2.3 DESIGN FOR STRENGTH	9
2.4 DEFLECTION	10
2.5 LATERAL LOADING	10
2.6 STABILITY	12
2.7 WORKING VELOCITIES	12
2.8 SAFETY DEVICES	12
2.9 IMPACT FORCES	12
2.10 WELDS	12
2.11 ELECTRICAL EQUIPMENT AND CONTROLS	13
2.12 HYDRAULIC EQUIPMENT AND CONTROLS	13
2.13 PNEUMATIC EQUIPMENT AND CONTROLS	13
2.14 BURSTING SAFETY FACTOR FOR HYDRAULIC AND PNEUMATIC SYSTEMS	13
2.15 COMPONENTS	13
2.16 VEHICLE HOISTS—HYDRAULIC	15
2.17 VEHICLE HOISTS—MECHANICAL	15
2.18 VEHICLE HOISTS—HYDROMECHANICAL	17
2.19 VEHICLE HOISTS—MOVABLE	17
2.20 HOIST MOTION LIMITS	17
2.21 MAINTENANCE	17
SECTION 3 INSTALLATION	
3.1 GENERAL	18
3.2 SAFETY COLOUR CODING	18
3.3 PROTECTION OF HYDRAULIC CYLINDER CASING	18
3.4 LOCATION OF VEHICLE HOISTS	18
3.5 VEHICLE CLEARANCE	18
3.6 FUNCTIONAL TESTS	18
3.7 DEMONSTRATION	18

SECTION 4 TYPE TEST REQUIREMENTS

4.1 GENERAL 19
4.2 UNLADEN TESTS 19
4.3 TEST LOADS 19
4.4 LADEN TESTS 19
4.5 COMPLIANCE WITH TESTS 20

SECTION 5 OPERATION AND MAINTENANCE INSTRUCTIONS

5.1 GENERAL 22
5.2 INFORMATION FOR MAINTENANCE TECHNICIANS 22
5.3 SUITABILITY FOR USE 22

APPENDICES

A ILLUSTRATIONS OF TYPICAL VEHICLE HOISTS 23
B GUIDANCE ON DEFLECTION LIMITS FOR VEHICLE HOISTS
IN THE STATIC CONDITION 30
C TYPICAL HAZARDS 31

Originated as AS 1418.9— 1987.
Jointly revised and designated AS/NZS 1418.9:1996.

STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

Australian/New Zealand Standard
Cranes (including hoists and winches)

Part 9: Vehicle hoists

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE This Standard specifies requirements for vehicle hoists as defined in AS 2549. It applies to wheel-supporting, axle-supporting and frame-supporting vehicle hoists and their accessories.

The Standard does not apply to vehicle jacks (see AS/NZS 2693), trolley jacks (see AS/NZS 2615), car stackers and vehicle roll-over equipment.

It is complementary to AS 1418.1, but the requirements specified herein take precedence over corresponding requirements in that Standard. Accessories shall comply with the appropriate Standard where this exists.

NOTES:

- 1 Although this Standard uses the term 'hoist', several overseas Standards use the term 'lift'.
- 2 Illustrations of typical vehicle hoists are given in Appendix A.

1.2 NEW DESIGN AND INNOVATIONS Any novel materials, designs, methods of assembly procedures and the like which do not comply with a specific requirement of this Standard or are not mentioned in it, but which give equivalent results to those specified, are not necessarily prohibited.

1.3 TYPES Vehicle hoists are normally fixed or movable types, with or without work platforms, comprising a combination of at least one of each of the following group of features:

- (a) Basic structural arrangement—
 - (i) single post;
 - (ii) two post;
 - (iii) multipost; or
 - (iv) single cylinder and multicylinder.
- (b) Vehicle supporting medium—
 - (i) wheel;
 - (ii) axle; or
 - (iii) frame (chassis).
- (c) Hoisting mechanism (see Clause 1.5.2).
 In general, a hoisting mechanism consists of—
 - (i) a prime mover;
 - (ii) a transmission device; and
 - (iii) a load suspension device.



SAI GLOBAL

This is a free 7 page sample. Access the full version online.

The remainder of this document
is available for purchase online at

www.saiglobal.com/shop

SAI Global also carries a wide range of publications from a wide variety of Standards Publishers:



Click on the logos to search the database online.