

Australian/New Zealand Standard™

Cranes, hoists and winches

**Part 10: Mobile elevating work
platforms**



AS/NZS 1418.10:2011

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee ME-005, Cranes. It was approved on behalf of the Council of Standards Australia on 11 January 2011 and on behalf of the Council of Standards New Zealand on 21 January 2011.

This Standard was published on 25 May 2011.

The following are represented on Committee ME-005:

Australian Chamber of Commerce and Industry
Australian Industry Group
Australian Institute for Non-Destructive Testing
Bureau of Steel Manufacturers of Australia
Construction and Mining Equipment Industry Group
Consult Australia
Crane Association of New Zealand
Crane Industry Council of Australia
Department of Commerce, Worksafe Division (WA)
Department of Justice and Attorney General (Qld)
Department of Labour New Zealand
Department of the Premier and Cabinet (South Australia)
Electricity Engineers Association (New Zealand)
Elevating Work Platform Association of Australia
Engineers Australia
Horticulture New Zealand
Industry and Investment NSW
Institution of Professional Engineers New Zealand
Vehicle Loading Crane Interests
WorkSafe Victoria
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 Standards may also be withdrawn.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 joint Australian/New Zealand Standards can be found by visiting the Standards Web Shop at www.saiglobal.com.au or Standards New Zealand web site at www.standards.co.nz and looking up the relevant Standard in the on-line catalogue.

For more frequent listings or notification of revisions, amendments and withdrawals, Standards Australia and Standards New Zealand offer a number of update options. For information about these services, users should contact their respective national Standards organization.

We also welcome suggestions for improvement in our Standards, and especially encourage readers to notify us immediately of any apparent inaccuracies or ambiguities. Please address your comments to the Chief Executive of either Standards Australia or Standards New Zealand at the address shown on the back cover.

This Standard was issued in draft form for comment as DR 08188.

Australian/New Zealand Standard™

Cranes, hoists and winches

Part 10: Mobile elevating work platforms

Originated as AS 1418.10—1987.
Third edition AS 1418.10(Int)—2004.
AS 1418.10(Int)—2004 revised and redesignated AS/NZS 1418.10:2011.

COPYRIGHT

© Standards Australia Limited/Standards New Zealand

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, unless otherwise permitted under the Copyright Act 1968 (Australia) or the Copyright Act 1994 (New Zealand).

Jointly published by SAI Global Limited under licence from Standards Australia Limited, GPO Box 476, Sydney, NSW 2001 and by Standards New Zealand, Private Bag 2439, Wellington 6140

PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee ME-005 Cranes, to supersede AS 1418.10(Int)—2004, *Cranes, hoists and winches*, Part 10: *Elevating work platforms*.

The objective of this Standard is to address the requirements for mobile elevating work platforms (MEWPs) in general and, in addition, those intended for specific applications such as use near live electrical conductors, or operation in orchards where specific design requirements are necessary to address the risks associated with the intended use. Additional requirements are also specified for portable MEWPs.

In the preparation of this Standard cognizance was taken of ISO 16368, *Mobile Elevating Work Platforms—Design, Calculations, Safety Requirements and Test Methods*.

This revision includes the following significant changes:

- (a) Sections 1 to 4 follow largely the requirements specified in ISO 16368. However, the reader is cautioned that some significant deviations from that Standard have been incorporated.
- (b) The introduction of specific requirements for safety devices taking cognizance of the requirements in EN 280, *Mobile Elevating Work Platforms—Design Calculations—Stability Criteria—Construction—Safety—Examinations and Tests*.
- (c) The introduction of load- and moment-sensing systems.
- (d) Requirements for insulated MEWPs have been combined into a separate section.
- (e) Revision to the ‘ring test’ used to verify the extent of low-voltage cover insulation on insulated MEWPs.
- (f) Clarification of requirements relating to basket insulation.
- (g) Clarification of insulation classes and marking.
- (h) The requirement for insulation test procedures to be developed in accordance with this Standard and documented by the manufacturer.
- (i) The introduction of requirements for MEWPs intended for exclusive use in orchards.
- (j) The introduction of requirements for portable MEWPs.
- (k) Explanatory notes on the changes for electrically insulated MEWP appear in Appendix B.

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.

Statements expressed in mandatory terms in notes to tables and figures are deemed to be requirements of this Standard.

At the time of publication of this Standard technical solutions to meet the requirements of Clauses 2.3.1.2, 2.3.1.4 and 2.3.4 may not be available for certain classes of MEWP.

The respective jurisdictional authority may specify the requirements of Clauses 2.3.1.2, 2.3.1.4 and 2.3.4 for uninsulated/insulated MEWPS including effective dates.

Australia and New Zealand have different requirements for insulated MEWPs (see Section 7).

CONTENTS

	<i>Page</i>
SECTION 1 SCOPE AND GENERAL	
1.1 SCOPE	5
1.2 REFERENCED DOCUMENTS	5
1.3 DEFINITIONS	7
1.4 NEW DESIGNS, INNOVATIONS AND DESIGN METHODS	13
SECTION 2 DESIGN REQUIREMENTS	
2.1 STRUCTURAL AND STABILITY CALCULATIONS	14
2.2 CHASSIS AND STABILIZERS/OUTRIGGERS	25
2.3 EXTENDING STRUCTURE.....	30
2.4 EXTENDING STRUCTURE DRIVE SYSTEMS	34
2.5 WORK PLATFORM.....	40
2.6 CONTROLS	42
2.7 ELECTRICAL EQUIPMENT	45
2.8 HYDRAULIC SYSTEMS	46
2.9 HYDRAULIC CYLINDERS.....	48
2.10 SAFETY DEVICES	54
SECTION 3 VERIFICATION OF THE SAFETY REQUIREMENTS OR MEASURES OR BOTH	
3.1 GENERAL	57
3.2 TYPE TESTS OF MEWPS.....	57
3.3 PRODUCTION TESTS	57
3.4 DESIGN CHECK	57
3.5 MANUFACTURING CHECK	58
3.6 TESTS	58
SECTION 4 INFORMATION FOR USE	
4.1 MANUALS	63
4.2 MARKING	63
SECTION 5 ORCHARD MEWPS	
5.1 GENERAL	68
5.2 SAFETY REQUIREMENTS AND MEASURES FOR ORCHARD MEWPs	68
SECTION 6 PORTABLE MEWPS	
6.1 GENERAL	72
6.2 SPECIFIC REQUIREMENTS.....	72
SECTION 7 INSULATED MEWP	
7.1 GENERAL	75
7.2 DESIGN	77
7.3 INSULATED OPERATOR'S BASKETS.....	78
7.4 LOW-VOLTAGE INSULATED PLATFORMS.....	79
7.5 INSULATION INSERTS	79
7.6 INSULATED COVERING.....	81
7.7 ELECTRICAL TEST POINTS.....	82
7.8 ADDITIONAL REQUIREMENTS	85
7.9 ACCEPTANCE TESTING OF ELECTRICAL INSULATION.....	86

APPENDICES

A	TYPICAL HAZARDS ASSOCIATED WITH MEWPs.....	105
B	EXPLANATORY NOTES ON THE CHANGES FOR ELECTRICALLY INSULATED MEWPs.....	109
C	DYNAMIC FACTORS IN STABILITY AND STRUCTURAL CALCULATIONS.....	116
D	STABILITY CALCULATIONS.....	118
E	USE OF MEWPs IN WIND SPEEDS GREATER THAN 12.5 m/s (BEAUFORT SCALE 6).....	121
F	TIPPING LINES OF MEWPs.....	122
G	INSTRUCTION MANUAL.....	127
H	ADDITIONAL REQUIREMENTS FOR CONTROL SYSTEM USING ENCODED DATA TRANSMISSION TECHNIQUES	130
I	COMMENTARY ON DESIGN SAFETY REQUIREMENTS FOR ORCHARD MEWPs	133
J	ELECTRICAL TEST REPORTS.....	137
K	MEWP INSERT SELECTION	142
L	LIST OF ELECTRICAL HAZARDS	145
M	OPERATIONAL PROCEDURES AND PERIODIC TESTING FOR ELECTRICALLY INSULATED MOBILE ELEVATING WORK PLATFORMS..	152
N	EXAMPLE OF THE APPLICATION OF CONTROL SYSTEM CATEGORIES...	171

STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

Australian/New Zealand Standard
Cranes, hoists and winches

Part 10: Mobile elevating work platforms

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard specifies requirements for mobile elevating work platforms (MEWPs), as defined in Clause 1.3. It does not apply to passenger and goods lifts, builders' hoists, fixed elevating work platforms, or mast climbing platforms.

Section 5 of this Standard provides variation of requirements for MEWPs that are specifically designed for use in orchards.

Section 6 of this Standard provides variations of requirements for portable MEWPs.

Section 7 of this Standard provides additional requirements for insulated MEWPs.

This Standard does not apply to any matter relating to firefighting equipment or to any matter relating to the vehicles upon which elevating work platforms are mounted, except to a vehicle which, while stationary, is a stable support for the extending structure.

NOTES:

- 1 Appendix A provides a list of typical hazards associated with MEWPs.
- 2 Appendix B provides explanatory notes on the changes to MEWP insulation that have been introduced in this revision.

1.2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS

1319	Safety signs for the occupational environment
1418	Cranes, hoists and winches
1418.1	Part 1: General requirements
1687	Knapsack spray pumps for firefighting
1824	Insulation coordination
1824.1	Part 1: Definitions, principles and rules
1824.2	Part 2: Application guide
1931	High-voltage test techniques
1931.1	Part 1: General definitions and test requirements
2067	Substations and high voltage installations exceeding 1 kV a.c.
2549	Cranes (including hoists and winches)—Glossary of terms
2550	Cranes, hoists and winches—Safe use
2550.10	Part 10: Mobile elevating work platforms
2700	Colour Standards for general purposes