

**GUIDELINES ON REQUIREMENTS FOR SAFETY DEVICES ON MOBILE ELEVATING WORK PLATFORMS (MEWPS)
TO BE APPLIED BEFORE THE PUBLICATION OF AS1418-10 (2010)
VERSION AS OF 27 MAY 2010**

Purpose

The purpose of this document is to set out the interim requirements for safety devices on new Mobile Elevating Work Platforms (MEWPs) used in Australia.

Background

The Australian Standard for EWPs (AS1418-10) was recently reviewed and requirements for safety devices were included to bring the relevant Australian requirements in line with European requirements under EN280. Unfortunately there is a delay in the publication of the revised AS1418-10. At the same time, the requirements for safety devices under EN280 are also being reviewed. Consequently, it is not possible at this point in time, to rely on any of these two standards to determine the requirements on safety devices for new MEWPs in Australia.

The Australian Regulators' Committee on High Risk Plant consulted extensively with industry (particularly the Elevating Work Platform Association of Australia Inc (EWPA) and agreed that a document setting out the interim requirements for safety devices on MEWPs should be developed and published by the Regulators' Committee. The document will be reviewed when either AS1418-10 has been published or the review on EN280 has been finalised.

This document is set out as follows:

- Part A – Requirements for safety devices on MEWPs
- Part B – Implementation phases on safety devices for MEWPs in Australia
- Part C - Alternative methods to achieve design registration

Part A – Requirements for safety devices on MEWPs

The Safety Related Parts of control systems of MEWPs must be designed in accordance with the requirements of either AS4024 or IEC60261 or ISO13849. In addition MEWPs are required, as a minimum, to be fitted with those safety devices specified in Table 1 that would be required to gain CE certification.

The overall objective is that each of the safety-related parts achieves a similar level of safety performance so that the contribution of the safety-related parts of the control system provides the required reduction in risk. Therefore the reliability and structure within the safety-related parts of the control system have both to be considered.

For the purpose of emergency retrieval intended to be performed by the operator or ground personnel, it shall only be possible to override a safety device listed in Table 1 in a safe manner by using a separate device of the same category or better. This requirement does not apply for specific maintenance and repair procedures intended to be performed by trained technicians.

Application

These requirements as far as they relate to the reliability of safety devices for various safety functions (as listed in Table 1) take precedence over the requirements specified in the primary standard used in the design.

Verification of the functional requirements for safety devices:

The functional requirements of safety devices define how the safety device must operate and does not relate to the reliability level.

The functional requirements shall meet or exceed the requirements specified in Table 1 and shall be verified by design review and functional test. Such tests shall be documented in a test report(s).

TABLE 1 – Description of Safety Function/Device of the MEWP and required reliability levels

| Paragraph no. in En280 | Description of Safety Function/Device of the MEWP ¹ | Variation to the functional requirements ² | Category of EN 954-1 or AS4024 | SIL of IEC60261 | Performance Level (PL) of ISO13849-1 | Notes |
|-------------------------------|---|---|---------------------------------------|------------------------|---|--------------|
| 5.3.1 | Prevents a Type 1 MEWP from travelling when work platform is out of the transport position | – | 1 | 1 | c (b-c) | |
| 5.3.2 | Level indicator (e.g. spirit level) to indicate whether the inclination of the MEWP chassis is within the limits permitted by the manufacturer. On MEWPs of Type 3, reaching the extreme limits of inclination shall be indicated by an acoustic audible alarm at the work platform | On Group A MEWPs of type 2 and 3, whilst travelling out of the lowered travel position, the device shall prevent motion that would further reduce stability when the chassis has reached the maximum allowable inclination. | 1 | 1 | c(b-c) | |
| 5.3.8.1 | Prevents work platform from operating outside permitted positions unless the stabilisers are set in accordance with the operating instructions | Not required for totally manually operated MEWPs that have a work platform floor height less than 5 metres. For type 1 MEWPs equipped with systems that lock or control oscillating axles to maintain stability the device shall prevent deployment of the extending structure until the oscillating axle(s) are locked or controlled. On Type 2 and 3 MEWPs, with systems other than mechanical/hydraulic locking mechanisms, that lock or control the oscillating axle, safety devices shall be fitted to the locking or controlling mechanism. | 1 | 1 | c(b-c) | |
| 5.3.8.2 | Prevents MEWPs (which are designed to operate in a limited range without stabilisers) from operating outside that range without stabilisers | | 3 | 2(1-2) | d | |
| 5.3.10 | Interlocks powered stabilisers in the required extended position, unless the MEWP is in transport mode or within a limited and “stable” range | | 3 | 1(1-2) | d | |
| 5.3.16 | Limits the speed of travel of the MEWP with manned work platform out of the lowered travel position on MEWPs of Type 2 and Type 3 | | 1 | 1 | c(b-c) | |
| 5.4.1.2 | Load sensing system to alarm and stop the work platform when certain rated load situations have been exceeded | If the load sensing system was triggered during normal movement of the work platform, the possibility of normal movement may remain. For group A MEWPs in general, the load-sensing system need not be activated until the work platform is elevated more than 1 m or 10 % of lift height, whichever is the greater, above the lowest position. If an overload condition is sensed at or above this height, further elevation shall be prevented | 3 | 2(1-2) | d | 3 |
| 5.4.1.3.3 | Control system to limit the work platform to the working envelope, when the envelope is not limited exclusively by mechanical stops. | | 3 | 2(1-2) | d | |
| 5.4.1.4 | Moment sensing system to provide visual warning when overturning moment is reached and prevents further movements, except those that reduce the overturning moment | | 3 | 2(1-2) | d | 3 |

| | | | | | | |
|---------|--|--|--|------------|-----------|---|
| 5.4.3 | Prevents movement of tilting chassis or superstructure unless the work platform is in its access position | | 1 | 1 | c(b-c) | |
| 5.4.4 | Time delay interlocks and alarm on the lowering movement of the MEWP structure to prevent crushing of fingers or body parts. | For Group A MEWPs, motion (lowering) alarms shall sound over at least the last 2000 mm of lowering to warn persons in the vicinity of a lowering platform. A time delay interlock is not required. | 1 | 1 | b(b-c) | 3 |
| 5.5.1.3 | Automatically prevents inadvertent movements of the work platform in the event of a failure of a chain or belt system in the drive system of the MEWP. | | 2 | 1 | c | |
| 5.5.2.7 | Prevents movement of the work platform in the event of a slack rope condition (applicable for MEWPs with work platforms that are raised and lowered by means of a wire rope). Not required if a slack rope condition cannot develop. | | 1 | 1 | b(b-c) | |
| 5.5.3.7 | Prevents movement of work platform in the event of a slack chain condition (applicable for MEWPs with work platforms that are raised and lowered by means of a chain) Not required if a slack chain condition cannot develop. | | 1 | 1 | c(b-c) | |
| 5.5.5.2 | Overspeed device on rack and pinion drives to lower the work platform (plus rated load) at a safe rate (≤ 1 g deceleration) | | 1 | 1 | c(b-c) | |
| 5.6.1 | Platform levelling system that limits the variation of the work platform (basket) inclination to a maximum of +/- 5 degrees. The levelling system must incorporate a safety device that prevents the inclination of the platform (basket) exceeding a further 5 degrees inclination if failure occurs within the system. | | 3 (1, in the case of master slave systems) | 2(1-2),(1) | d, c(b-c) | |
| 5.6.3 | Prevents operation of the MEWP until the gate is closed and fastened (locked) in position, (if gates are not designed to automatically close and lock). Outward opening gates are not permitted | | 2 | 1 | c | |
| 5.7.4 | Interlocks controls so that control of MEWP can only be done at one pre-selected station. | | 1 | 1 | c(b-c) | |
| 5.10.2 | Prevents unintended movement of load holding cylinders, in the event of failure of a hose or pipe. | | 1 | 1 | c(b-c) | |

Notes:

1. For details of the application and functional requirements of these devices –refer to En280
2. For the purpose of this guideline the variations listed are permissible.
3. These devices are required to be fitted by 1 March 2011 for uninsulated MEWPs and 1 March 2012 for insulated MEWPs – See Part B
4. The contents of this Table have been taken from EN280+A2-2009 clause 5.11. Unless otherwise agreed to by the Australian Regulators' Committee on High Risk Plant and the Table revised by the Committee, the requirements in this table will be adhered to.
5. The variations in range have been included in parenthesis in the above Table. There is actually no exact equivalence between the three parameters (i.e. EN954-1 or AS4024, SIL of IEC60261 and Performance Level (PL) of ISO13849-1), as it depends upon the circuit design and configuration

Verification of the specified reliability levels for safety devices:

For the purpose of Australian design verification, compliance with the reliability levels specified in Table 1 for each device can be demonstrated in one of the following ways:

1. CE Certification and EC Type examination certificate issued by an EC Notified Body and separate verification relating to the variations listed in Table 1. For equipment imported into Australia, the CE Certification and EC Type examination certificate specifically refer to EN280 and include some form of verifiable link to positively identify the imported plant as the same plant items referred to in the certifications. E.g. a letter from the Notified Body to say that they have sighted the specific models that are imported into Australia.
2. An EC declaration of conformity issued by the manufacturer and provision of the EC Homologation file and supporting documentation demonstrating compliance with the above requirements. The design verifier has to examine the manufacturer's technical documentation and ensure that there is sufficient proof that the manufacturer's declaration of conformity is adequately supported.
3. Validation according to the requirements specified in AS4024, EN954-1, ISO62061 or ISO 13849.2 as applicable. (Note: These standards only cover the safety control systems and have very little to do with other design aspects of the plant e.g. stability/strength etc.)

For the purpose of Design verification or validation the verifier must satisfy the requirements for design verifiers specified in the relevant OH&S Plant Regulations.

Design Verification to AS1418.10

For new designs or modified designs conformity can be demonstrated in one of the following ways: (See Part C)

1. CE Certification and EC Type examination certificate issued by an EC notified body, and separate verification relating to the variations listed in Table 1. The certification issued by the EC notified body must specifically refer to EN280.
2. Design verification against AS1418.10 and validation of the requirements for safety devices according to AS4024, EN954-1, ISO62061 or ISO 13849.2 as applicable.

Part C provides illustration of alternative design verification processes.

NOTE: For the purpose of Design verification or validation the verifier must satisfy the requirements for design verifiers specified in the relevant OH&S Plant regulations.

Part B – Implementation phases on safety devices for MEWPs in Australia

These requirements apply no later than the following:

- All relevant safety devices listed in Table 1, other than those relating to load sensing, moment sensing, lowering interlocks on scissor type MEWPS and travel function Interlocks are to be fitted to all MEWPs imported into or manufactured in Australia after **1 June 2010**
- Safety devices associated with load sensing and moment sensing are to be fitted to:
 - Uninsulated MEWPs imported into or manufactured in Australia after **1 March 2011**
 - Insulated MEWPs imported into or manufactured in Australia after **1 March 2012**.

Dates are valid based on assumption that the National Regulators' Committee for High Risk Plant confirms (in writing and at public forums) the position regarding safety system requirements in February 2010

Note: Solutions for load sensing and moment sensing can be provided in a number of ways and are specified in En280 Table 3.

Machine Identification:

All MEWPs that comply with these requirements must display the following information in a clear and visible area on a durable plate or label. This identification marking requirement will not be required once AS1418-10 and EN280 are finalised (then this guideline will no longer be needed)

| |
|---|
| This MEWP meets the requirements of the Guideline published by the National Regulators' Committee on High Risk Plant dated 16 February 2010. Manufacturer._____Serial No._____Date_____ |
|---|

Where:

Manufacturer is the name of the organisation holding the relevant supporting documentation.
Serial Number is the Serial number of the MEWP.
Date is the date of fixing of the plate to the MEWP.

NOTE: This statement maybe incorporated in the machine identification plate.

PART C - Alternative methods to achieve design registration

