
Mobile elevating work platforms — Safety principles, inspection, maintenance and operation

Plates-formes élévatrices mobiles de personnel — Principes de sécurité, inspection, entretien, mise en œuvre et utilisation

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 18893 was prepared by Technical Committee ISO/TC 214, *Elevating work platforms*.

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Introduction

This International Standard is one of a series of standards produced by ISO/TC 214 as part of its program of work regarding standardization of terminology, ratings, general principles (technical performance requirements and risk assessment), safe requirements, test methods, maintenance and operation for elevating work platforms used to raise (elevate) and position personnel (and related work tools and materials).

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Mobile elevating work platforms — Safety principles, inspection, maintenance and operation

1 Scope

This International Standard applies to all Mobile Elevating Work Platforms (MEWPs) that are intended to position persons, tools and materials and which, as a minimum, consists of a work platform with controls, an extending structure and a chassis.

The technical safety requirements of this International Standard shall apply except where national or local regulations are more stringent.

For related information, see ISO 16368.

This International Standard applies to MEWPs to achieve the following objectives:

- a) prevention of personal injuries, property damage and accidents;
- b) establishment of criteria for inspection, maintenance and operation.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 16368, *Mobile elevating work platforms — Design calculations, safety requirements and test methods*

ISO 18878, *Mobile elevating work platforms — Operator (driver) training*

IEC 61057, *Aerial devices with insulating booms used for live working*

IEC TS 61813:2000, *Live working — Care, maintenance and in-service testing of aerial devices with insulating booms*

3 Terms and definitions

For the purpose of this document, the terms and definitions given in ISO 16368 and ISO 18878 and the following apply.

3.1

authorized person

person approved or assigned to perform a specific type of duty or duties at a specific location or locations at a job site

3.2

configuration

arrangement of elements of MEWP within intended operating limits, including variable rated loads

3.3

working envelope

all positions in which a work platform can be placed relative to the chassis, within intended operating limits

3.4

custodian

entity or person who has direct control of the use and application of the MEWP, either by ownership, lease/rent or assignment by the owner

3.5

delivery

transfer of care or control of an MEWP from a person or entity to another person or entity

3.6

maintenance

act of upkeep, such as inspection, lubrication, refuelling, cleaning, adjustment and scheduled parts replacement

3.7

modification

change(s) to an MEWP which affects the operation, stability, safety factors, rated load, or safety of the MEWP in any way

3.8

operation

performance of functions of an MEWP within the scope of its specifications and in accordance with the manufacturer's instructions, the custodian's work rules and applicable governmental regulations

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3.9

operator

person who controls the operation of a MEWP

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3.10

qualified person

person who, by possession of a recognized degree, certificate or professional standing, or by extensive knowledge, training and experience, has successfully demonstrated his/her ability to solve or resolve problems related to the subject matter, the work, or the project

3.11

safety-related bulletin

publication from the manufacturer of a MEWP that requires the attention of those in control of a MEWP to assure its safe operation

3.12

stable

condition where the MEWP does not overturn, described technically as the condition in which the sum of the moments acting to overturn an MEWP is less than the sum of the moments tending to resist overturning

4 General requirements

4.1 Basic principles

The information in this International Standard shall be supplemented by good job management, safety control, and the application of sound principles of safety, training, inspection, maintenance, application and operation. All data available regarding the parameters of intended use and expected environment shall be considered. Those with direct control over the application and operation of MEWPs shall be responsible for the conformance with good safety practices. Decisions on the use and operation of the MEWPs shall always be made with due consideration for the fact that the machine will be carrying persons whose safety is dependent on those decisions.

The operation of any MEWP is subject to certain hazards that can be protected against only by the exercise of intelligence, care, and common sense and not by mechanical means. It is essential to have competent, careful persons trained (see ISO 18878) in the intended use, safe operation, maintenance and service of this type of equipment.

The operation of any MEWP used for working on energized conductors shall conform to the requirements of this International Standard and the requirements of IEC TS 61813.

4.2 Manuals (handbooks)

A custodian shall ensure that the manufacturer's information necessary for the operation and daily inspection/maintenance of the MEWP is provided with each rental, lease or sale delivery. The custodian shall make available the manufacturer's maintenance information for use by trained personnel to the entity responsible for maintaining the MEWP.

4.3 Record retention

The following records shall be retained by the custodian.

- a) Name and address of the purchaser of each MEWP by serial number and date of delivery shall be retained for a minimum of 20 years after sale of the MEWP or until the MEWP is permanently removed from service.
- b) Written records of the frequent and annual inspections on the MEWP shall include the date of inspection, deficiencies found, corrective action accomplished and identification of the person(s) performing the inspection. These records shall be retained for a minimum of 10 years after the sale of the MEWP or until the MEWP is permanently removed from service.
- c) Written records of all repairs accomplished on the MEWP shall include the date of any such repair, a description of the work accomplished and identification of the person(s) performing the repair. These records shall be retained for a minimum of 10 years after the sale of the MEWP or until the MEWP is permanently removed from service.

4.4 Modifications

Modifications or additions to an MEWP shall be made only with prior written permission of the manufacturer. In case the manufacturer no longer exists, MEWPs may be modified according to instructions of a qualified person.

5 Maintenance

5.1 Preventative maintenance

A preventive maintenance program shall be established in accordance with the manufacturer's recommendations and based on the environment and severity of use of the MEWP. It shall include the frequent and annual inspections as defined in this International Standard. All malfunctions and safety-related problems identified shall be corrected before the MEWP is returned to service.

5.2 Inspection and maintenance

The MEWP shall be inspected and maintained as required to ensure proper operation. The frequency of inspection and maintenance shall be determined by the manufacturer's recommendations and shall be compatible with operating conditions and the severity of the operating environment. MEWPs that are not in proper operating condition shall be repaired by a qualified person and the repairs shall be in conformance with the manufacturer's recommendations.

5.3 Frequent inspection

5.3.1 A frequent inspection is to be performed in accordance with the manufacturer's instruction on the MEWP as well as

- a) upon transfer of custody, unless it is determined that the frequent and annual inspections are current;
- b) for a unit that has been out of service for a period longer than three months, unless environmental conditions require a shorter period, prior to the MEWP being placed in service.

5.3.2 The inspection shall be made by a person qualified for the specific make and model of the MEWP. The inspection shall include all items specified by the manufacturer for a frequent inspection and shall include but not be limited to the following:

- a) all functions and their controls, for speed(s), smoothness and limits of motion;
- b) base or ground-level controls, including the provisions for overriding of additional controls;
- c) all chain and cable mechanisms, for adjustment and worn or damaged parts;
- d) all emergency and safety devices;
- e) lubrication of all moving parts, inspection of filter element(s), hydraulic oil, engine oil, and coolant as specified by the manufacturer;
- f) visual inspection of structural components and other critical components such as fasteners, pins, shafts, turntable attachment bolts and locking devices;
- g) instructions, warnings and control markings;
- h) hydraulic or pneumatic systems, for observable deterioration or leakage;
- i) electrical systems, for signs of damage, deterioration, dirt or moisture accumulation;
- j) additional items specified by the manufacturer.

The MEWP shall not be placed into service until all malfunctions and safety-related problems have been corrected.

5.4 Annual inspection

An annual inspection shall be performed on the MEWPs no later than thirteen (13) months from the date of the prior annual inspection. The inspection shall be performed by a person qualified for the specific make and model of MEWP. The inspection shall include all items specified by the manufacturer for an annual inspection.

5.5 Pre-start inspection

Before use each day or at the beginning of each shift, the MEWP shall be given a visual inspection and functional test including but not limited to the following:

- a) operating and emergency controls;
- b) safety devices;
- c) personal protective devices;
- d) air, hydraulic and fuel-system leaks;
- e) cables and wiring harness;
- f) loose, damaged or missing parts;
- g) tires, wheels and wheel fasteners;
- h) instructions, warnings, control markings, and operating manual(s);
- i) structural items including stabilizers;
- j) work platform, including guardrail system, floor, anchorage and mounting;
- k) other items specified by the manufacturer.

5.6 Maintenance and repair safety precautions

5.6.1 Before adjustments and repairs are started on MEWPs, the following precautions shall be taken, as applicable:

- a) power plant stopped and means of starting rendered inoperative;
- b) all controls in the "off" position and all operating systems secured from inadvertent motion;
- c) work platform lowered to the full down position, if possible, or otherwise secured to prevent dropping;
- d) hydraulic oil pressure relieved from all hydraulic circuits before loosening or removing hydraulic components;
- e) safety props or latches installed where applicable as prescribed by the manufacturer.

5.6.2 Certain maintenance work may require the MEWP to be in conditions other than those described in 5.6.1. In this case, safety measures shall be followed as described in the maintenance instructions.

5.7 Maintenance training

Maintenance personnel must be trained by a qualified person to inspect and maintain the MEWP in accordance with this International Standard and the manufacturer's recommendations.