

Review of Newly Released ANSI/SAIA A92.22-2018 Safe Use of Mobile Elevating Work Platforms (MEWPs)

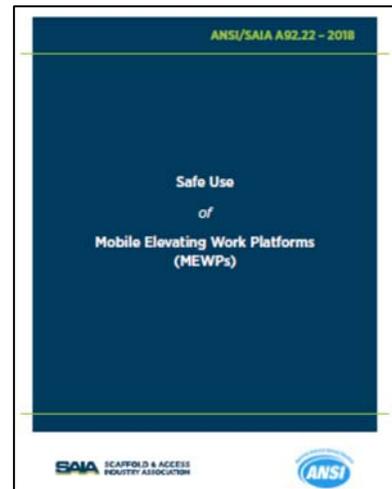
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Introduction

ANSI/SAIA A92.22-2018, *Safe Use of Mobile Elevating Work Platforms (MEWPs)*, was published on December 20th, 2018, and becomes effective on March 1st, 2020. This American National Standard Institute (ANSI) document is one of a series of standards produced by ANSI/SAIA A92 as part of its program of work regarding standardization for MEWPs used to raise and position personnel, related work tools, and materials.

ANSI/SAIA A92.22, along with companion Standards A92.20 and A92.24, have been developed to replace existing Standards ANSI/SAIA A92.3, A92.5, A92.6 and A92.8. The reasoning that led to the development of the three new Standards was as follows

1. To combine the requirements for MEWPs exhibiting similar configuration and application
2. To more closely align with existing ISO Standards
3. To more closely relate to a specific audience



The Standard specifies requirements for application, inspection, training, maintenance, repair and safe operation of MEWPs. It applies to all types and sizes of MEWPs as specified in A92.20 that are intended to position personnel along with their necessary tools and materials at work locations.

Objective

The primary objective of the Standard is as follows:

1. Prevent accidents, personal injuries, and property damage
2. Establish requirements for application, inspection, training, maintenance, repair, and safe operation
3. Establish the respective responsibilities of manufacturers, dealers, owners, users, supervisors, operators, occupants, lessors, lessees, and brokers
4. Promote safe use

Associated Standards

The Standard is intended to be used in conjunction with the following ANSI documents:

1. ANSI/SAIA A92.20 - *Design Calculations, Safety Requirements and Test Methods for Mobile Elevating Work Platforms*
2. ANSI/SAIA A92.24 - *Training Requirements for the Use, Operation, Inspection, Testing and Maintenance of Mobile Elevating Work Platforms*

This review is intended to summarize the A92.22 Standard's requirements with an emphasis on use and application in the tower industry. For those familiar with this industry, these improvements to the Standards are welcome and long overdue. For reference, corresponding Standard sections are included in parentheses.



Definitions

A Mobile Elevating Work Platform (MEWP) is defined as a machine/device intended for moving persons, tools, and material to working positions, consisting of at least a work platform with controls, an extending structure, and a chassis. For additional definitions see Section 3 of the Standard.

Classifications

MEWP classifications (1.1.3) are made up of a MEWP group (platform location in reference to tipping line) and with an associated MEWP type (reference to traveling). See Appendix A of the Standard for examples.

- Group A:** MEWPs on which the vertical projection of the center of the platform area, in all platform configurations at the maximum chassis inclination specified by the manufacturer, is always inside the tipping lines.
- Group B:** MEWPs not in Group A.
- Type 1:** MEWP for which travelling is allowed only when in the stowed position.
- Type 2:** MEWP for which travelling with the work platform in the elevated travel position is controlled from a point on the chassis. Note type 2 and type 3 MEWPs can be combined.
- Type 3:** MEWP for which travelling with the work platform in the elevated travel position is controlled from a point on the work platform. Note type 2 and type 3 MEWPs can be combined.

General Requirements

All entities shall apply the information in the Standard in combination with good job management, safety control, and the application of sound principles of safety, training, inspection, maintenance, application, and operation. The intended use and expected environment shall be evaluated. Decisions on the application and operation of the MEWP shall be made with consideration for safety of the occupants and personnel in the vicinity. The selection, positioning, operation, maintenance and pre-start, pre-delivery, frequent and annual inspections of the equipment shall be performed by a qualified person in accordance with the manufacturer's requirements. All tasks shall be properly planned, appropriately supervised and carried out in a safe manner. Having identified the hazards associated with the use of MEWPs, the qualified person shall evaluate the risks associated with their use and implement appropriate control measures (4.1.1).

Safe Use

A safe use program (4.2) specific to MEWPs shall be developed by the user and shall include:

1. Performing a site risk assessment to identify hazards, evaluate risk, develop control measures, and communicate with affected persons
2. Selection, provision and use of a suitable MEWP and work equipment
3. Access, preparation, and maintenance of the site, as required, to include an assessment that the support surface is adequate to support the weight of the MEWP
4. Maintenance including inspection and repairs as required by the Standard and manufacturer
5. Only trained and authorized personnel are allowed to operate and/or occupy the MEWP
6. Familiarization of authorized operator with the specific MEWP to be used
7. Inform the operator of site requirements and warn and provide the means to protect against identified hazards in the work areas
8. Have trained and qualified supervisor(s) to monitor the performance of the work of the operator
9. Prevention of unauthorized use of the MEWP
10. Safety of personnel not involved in the operation of the MEWP

Operation Manual

Users are required to maintain a copy of the operation manual(s) in a weather-resistant compartment on the MEWP. The user shall ensure the operator reads and understands the manufacturer operator's manual or has it explained (4.3.1.4).

Pre-Start Inspection

Before each day or at the beginning of each shift, the user and the operator shall perform a pre-start and functions test that includes the following (5.5):

1. Operating and emergency controls
2. Audible and visual alarms and beacons
3. Personal protective devices that will be worn while operating/occupying
4. Air, hydraulic and fuel-system leaks
5. Electrical cables and wiring harness
6. Loose, damaged, worn or missing parts
7. Tires, wheels, and wheel fasteners
8. Instructions, warnings, control markings, and operator's manual(s)
9. Structural items including extending structure and stabilizers/outriggers
10. Work platform, including guardrail system, floor, anchorage and mounting
11. Cleanliness and general signs of damage
12. Brake operation and performance
13. Fluid levels including engine coolant, engine oil, and hydraulic oil
14. Pins, pin securing devices, and visible damage to the support of the work platform and extending structure
15. Operation of stabilizers/outriggers, extendable, and oscillating axles
16. Any additional item(s) specified by the manufacturer



Risk Assessment

The user shall direct personnel operating a MEWP to be in compliance with the provisions of the Standard and the manufacturer's requirements (6). The user shall develop and implement a safe use program (4.2), monitor personnel performance and supervise their work to ensure the use, application and operation is in conformance with the provisions set forth in the Standard, warn personnel of potential hazards (6), provide means to protect against identified hazards, and explain the potential consequences of not following proper operating guidelines. User's personnel, to include MEWP supervisors, operators and occupants, shall comply with applicable requirements (6).

It is the user's responsibility to ensure an appropriate MEWP risk assessment is performed by qualified personnel (6.1.1). As the first stage in the risk assessment, the task to be undertaken should be clearly identified together with the location and timing (6.1.2.1).

There are many different types of MEWPs with various rated capacities, working heights and reaches. The user shall select an appropriate machine based upon consideration of factors including, but not limited to, the task to be undertaken, the constraints of the worksite, ground conditions, site access and proximity to the public or other personnel (6.1.2.2).

The risks associated with the task specific to MEWP operations shall be identified. These might be associated with the location where the work is to be carried out, the nature of the MEWP or the personnel, materials and equipment to be carried (6.1.2.3). Once the hazards and risks involved in the task have been identified, the procedures and measures required to control them shall be identified and implemented (6.1.2.4). The risk assessment results are used to plan safe work procedures, including any contingencies required, in carrying out the identified tasks (6.1.2.5).

Rescue Planning

Rescue planning is a necessary component of a risk assessment when working at height. There are situations that require prior planning to ensure a safe and timely rescue (6.1.2.6.1). A system failure of the MEWP that results in the loss of the platform control functions may be addressed by the use of the auxiliary power function of the controls and/or the secondary manual emergency descent controls. Follow the MEWP manufacturer's directions in the use of these systems. This plan should be included in operator training and occupant instructions (6.1.2.6.2). A fall from the MEWP platform when using a fall arrest system will require a rescue plan to determine how the affected worker will return safely to the platform or ground. The plan shall be put in writing and become part of the company's training manual. All occupants shall receive training that explains procedures to follow if they fall and await rescue or witness another worker's fall. Ideally this plan will limit the time that an occupant is suspended after an arrested fall (6.1.2.6.3).

A rescue plan (6.1.2.6.4) can include the following:

1. Self-rescue – by person involved
2. Assisted rescue – by others in the work area
3. Technical rescue – by emergency services

As part of the rescue plan, consideration shall be given to the rescue of MEWP work platform occupants if the machine is unable to be lowered for any reason, such as complete machine malfunction or work platform entanglement. In the case of platform entanglement, the operator and occupants shall be removed from the platform prior to attempts being made to free the platform. MEWPs which have tipped beyond their center of gravity shall be stabilized and secured before attempting rescue. Technical rescue might also be necessary in the event of illness, injury, or risk of exposure. Any rescue procedure shall account for the reasons why the MEWP platform may be stranded at height and any need for prompt action (6.1.2.6.5). Rescue should always be performed by appropriately trained personnel, using the MEWP's ground controls or secondary lowering system when feasible (6.1.2.6.6).

Rescue using another MEWP should be carried out only once a site review has been implemented and a plan is created (6.1.2.6.7). The plan should account for the following:

1. The rescue machine should be positioned to enable the rescue procedure to be carried out without compromising the safety of personnel involved in the rescue.
2. The platforms of both MEWP shall be adjacent to each other with a minimal horizontal/vertical gap between them. The power to controls on both machines should be switched off during the transfer.
3. The person being rescued should be fitted with proper PPE and the lanyard should be attached to the anchor points on the rescue machine before the transfer takes place.
4. The rescue machine shall not be overloaded during the rescue. This could mean making more than one trip to complete the rescue as required.
5. Always comply with the MEWP manufacturer's requirements stated in the operator's manual.

If there is injury, illness or risk of exposure (such as suspension trauma), emergency personnel shall be called. Suspension trauma can occur if a person has been suspended at height for a period of time.

The user shall communicate the results of the risk assessment to the entities involved (6.1.2.7.1). Before a job starts and periodically throughout a long-term job, the risk assessment shall be reviewed to check if any parts of the tasks or the working environment have changed and the effect that it could have on the safety of the operation. If any modifications to the risk assessment are required, these shall be communicated to all those involved prior to resuming the job (6.1.2.7.2).

The user shall ensure the operator of a MEWP is physically and mentally capable to operate the MEWP safely (6.2.1). The user shall ensure and the operator shall comply with the requirement for operators to be trained and familiarized in accordance with A92.24 and this Standard before being authorized to operate a MEWP. Only trained and authorized persons shall be permitted to operate a MEWP (6.2.1.1). The user is responsible to assess if personnel are qualified to perform the task (6.2.1.2).

Occupant Knowledge

The user shall ensure that the MEWP operator provides instruction or otherwise ensure all occupants have a basic level of knowledge to work safely in the MEWP (6.2.2). All personnel that directly supervise MEWP operators shall receive training (6.2.3).

Retraining

The user shall designate a qualified person to monitor, supervise, and evaluate operators on a regular basis to ensure their proficiency (6.2.4). The evaluation will be accomplished through visual observation, at a minimum, which shall be documented for retention by the user. Examples of situations when retraining would be necessary include, but are not limited to:

1. Expiration of the operator's valid training period
2. Deterioration of the operator's performance
3. The operator's extended period of time with no operation of a MEWP
4. The operator's introduction to new or significantly different MEWP technology
5. The operator has been involved in an accident or near miss



Prior to user's authorization of an operator to use a specific model of MEWP, the user shall ensure the operator is familiarized on the following, and as specified by the manufacturer (6.2.5.1):

1. Identification of the location for the manual(s) storage
2. Requirement that the required manual(s) specified by the manufacturer are with the equipment
3. Purpose and function of the controls specific to the model of MEWP to be used
4. Features, limitations, and devices
5. Operating characteristics specific to the model of the MEWP being utilized

When authorized by the user, self-familiarization can be achieved, if authorized, by a properly trained operator reading, understanding and following the manufacturer's operator's manual (6.2.5.2). The user shall ensure that after familiarization, the operator operates the MEWP for a sufficient period of time to achieve proficiency (6.2.5.3).



Before Operation

To ensure the safe operation of MEWPs, the user shall direct their personnel to include supervisors of MEWP operations, operators, and occupants of a MEWP to be aware of and comply with all provisions set forth in this standard before operation, including but not limited to the following (6.4):

1. Understanding of the task to be performed
2. Selection of a MEWP appropriate for the task to be performed
3. Knowledge of the possible hazards associated with the task, site, or environment and the means to safely deal with the hazards
4. Knowledge of the intended purpose and function of each control and items specified by the manufacturer
5. Authorization by the user
6. Stabilizing devices, such as outriggers, extendable axles, or other stability-enhancing means are used as required by the manufacturer
7. Guardrails are installed and access gates or openings are closed or in appropriate positions per manufacturer's instructions
8. Loads and their distribution on the work platform and any platform extension are in accordance with the manufacturer's rated load for that specific configuration
9. Read and understand or have a qualified person explain the manufacturer's operating instructions

and user safety rules

10. Read and understand or have a qualified person explain all decals, warnings, and instructions
11. Use of appropriate PPE for the conditions including the operation environment
12. Ensuring that there is another qualified person on site, who is not working on the platform and knows how to use the emergency controls

Prior to Each Operation

Prior to each operation, the user shall ensure and the operator shall comply with, prior to each operation of the following (6.6):

1. Stabilizing devices, such as outriggers, extendible axles, or other stability-enhancing means are used as required by the manufacturer
2. Guardrails and access gates or openings are closed or in appropriate positions per the manufacturer
3. Loads and their distribution on the work platform and any platform extension are in accordance with the manufacturer's rated load for that specific configuration
4. All occupants of the MEWP shall receive instructions from the operator as defined in ANSI A92.24
5. PPE is used when required

Workplace Inspection

Before and during the use of the MEWP, the user shall ensure and the operator shall perform a workplace inspection in the area to check for possible hazards, such as but not limited to (6.5):

1. Drop-offs or holes, including those concealed by water, ice, mud, etc.
2. Slopes
3. Bumps, floor obstructions, and electric cables
4. Debris
5. Overhead obstructions
6. Electrical conductors
7. Hazardous atmospheres and/or hazardous locations
8. Surfaces inadequate to sustain the ground-bearing pressures imposed by the MEWP
9. Wind and weather conditions
10. Presence of personnel and other mobile equipment
11. Traffic hazards

Fall Protection

The guardrail system of the MEWP is the primary fall protection for occupants. When required to use personal fall protection, either fall restraint or fall arrest, operators and occupants shall comply with the instructions provided by the manufacturer regarding anchorage(s) (6.8.1.1). All group B MEWP operators and occupants shall use personal fall arrest or fall restraint systems at all times (6.8.1.2).

Weather Considerations

The user shall define and the operator shall comply with control measures to address the potential risk associated with weather conditions when operating MEWPs, to include conditions such as wind, lightning, ice, fog or any other weather condition that directly or indirectly affects the safe operation of a MEWP (6.8.2). Care shall be taken when handling building materials, sheet materials, panels and other such materials which can act as sails (6.8.2.2). The shielding and funneling effects of structures can cause high wind speeds and turbulence on days when the wind speed in open areas is low. Other sources of local high wind speed that shall be considered in relation to safety at worksites are at airports and along roadways (6.8.2.3). MEWPs shall not be used outdoors in a thunderstorm. MEWPs can be used inside of a building where the MEWP and operator are not subject to a lightning strike (6.8.2.4).



Ground Condition Considerations

The user shall identify potential hazards caused by ground conditions and provide the operator with warning and instructions. Operators shall comply with the instructions and notify their supervisor if additional potential hazards are identified during their workplace inspections and avoid the risk until directed otherwise by their supervisor (6.8.3). The stability and safety of MEWPs are affected by poor ground conditions which can lead to the machine becoming out of level and unstable. The user shall ensure that the area where the MEWP is going to be used prior to operation be inspected and fully comply with all warnings and instructions provided by the manufacturer. If the level indicator indicates that the operating limits are nearing the MEWP's specified limits, then the operator shall lower and reset the MEWP in a level position (6.8.3.1). The user shall ensure and the operator shall comply with the requirement not to operate a MEWP on grades, slopes, ramps, or cambers exceeding those for which the MEWP is rated by the manufacturer (6.8.5).

Some soil types, moist soils, and soils which have not been compacted as well as some improved surfaces (paved, concrete, compacted, etc.) are not capable of supporting the pressures of outrigger pads. In such cases, the user and operator shall determine and ensure that some form of foundation or spreader pad is required to reduce the ground pressure to an acceptable level. Spreader pads shall have sufficient size, stiffness and strength to spread the load over the required area (6.8.3.2). Users and operators shall ensure that sub-surface voids such as cellars, basements, culverts, and pipes shall be taken into consideration when determining the adequate strength required to support the MEWP in its operating configuration (6.8.3.3). The user shall direct and the operator shall comply with the requirements not to position the MEWP against, tied to or restrained by another object to steady the platform or improve stability (6.8.24).

Public Roads

The user shall identify potential hazards caused by operations on public roads and provide the operator with warning and instructions. Operators shall comply with the instructions and notify their supervisor if they identify additional hazards during their workplace inspections and avoid the risk until directed otherwise by their supervisor (6.8.4). When a MEWP is loaded/unloaded from a transporting vehicle on a public road, the users and operators shall ensure that appropriate measures are taken to protect the personnel involved (6.8.4.1). These measures may include but are not limited to:

1. Warning cones
2. Road signs and signaling devices
3. Use of appropriate PPE such as reflective clothing
4. Flag personnel to warn other vehicles
5. Compliance with local, state, and federal regulations

When a MEWP travels between worksites, adequate protection or signaling to warn the public shall be provided to the operator by the user (6.8.4.2).

Traveling

The operator shall comply with the manufacturer's requirement for traveling (6.8.10.1), to include:

1. Visually inspect the area around the MEWP platform for obstructions and check the direction of platform movement with reference to the indicators on the chassis, if applicable, and the controls before operating
2. Ensure that personnel in the work site area are aware of the movement of the MEWP

The operator (6.8.10.2) shall:

1. Maintain a clear view of the area continuously in the direction of movement, including above and below the MEWP work platform, maintain an adequate clearance distance from hazards and avoid any distractions
2. Travel with the MEWP boom/platform positioned at the lowest safe position for the conditions
3. Move at speeds that are appropriate for safe operation
4. Allow for the platform movements due to the effects when traveling over uneven surfaces, slopes and ramps
5. Allow for the distance the work platform may move or MEWP will travel before a complete stop

after controls are released or returned to neutral position

6. Not lean on or over the guardrails while the MEWP is elevating or traveling close to obstructions
7. Not lean his/her body over the work platform control panel at any time
8. Not place objects on the work platform control panel
9. Provide for the safety of any others in the work platform during any movement.

The operator shall ensure that the area surrounding the MEWP is clear of personnel and equipment before any movement of the MEWP (6.8.20). Care shall be taken to prevent entanglement; rope, electric cables and hoses, etc., from becoming entangled in the MEWP or adjacent structure or objects. Users shall avoid these applications, if possible, and operators shall take precautions to avoid entanglement during operation of the MEWP (6.8.18).

Work Platform

Users shall direct and operators shall comply with the requirements to install and position guardrails, and that access gates or openings shall be properly closed or in appropriate positions per the manufacturer's instructions. The guardrails of the MEWP shall not be used to carry materials unless approved by the manufacturer and such materials shall not exceed the rated capacity of the platform (6.8.7). The operator should use available devices to deactivate the controls on the MEWP work platform, whenever possible (6.8.10.3). The user shall ensure and the operator shall comply with the need for materials on the work platform floor to be secured and do not pose a hazard, to include while moving the MEWP (6.8.11). The user shall direct the operator and occupants shall comply with maintaining a firm footing on the MEWP platform floor at all times while working. Climbing by occupants on the toe board, mid-rail or top-rail of the MEWP is prohibited. The use of planks, ladders, or any other devices on the work platform for achieving additional height is prohibited (6.8.13). Care shall be taken to prevent rope, electric cables and hoses, etc., from becoming entangled in the MEWP or adjacent structure or objects. Users shall avoid these applications, if possible, and operators shall take precautions to avoid entanglement during operation (6.8.19). If the work platform, extension or elevating assembly becomes caught, snagged or otherwise prevented from normal motion by adjacent structures or other obstacles such that control reversal does not free the platform, users and operator shall ensure that all operators and occupants are removed from the work platform before attempts are made to free the platform using ground controls (6.8.32). The operator shall ensure adequate clearance is maintained from overhead obstructions (6.8.9). The user shall direct and the operator shall comply with the requirement to never climb on the MEWP extending structure (6.8.27).

MEWPs are not specifically designed to transfer personnel from one level to another or for leaving the work platform. Exiting (or entering) a MEWP at height shall only be permitted through a procedure provided by the manufacturer or qualified person that addresses the following (6.8.33):

1. Fall prevention of persons during transfer from the work platform to the structure
2. Fall prevention of tools and materials during transfer from the work platform to the structure
3. Sudden movement of the MEWP or work platform
4. Additional loads or changing of loads imposed on the MEWP for which it was not designed which could affect stability or overload the machine
5. Dynamic and impact loads from PPE
6. Damage to the MEWP or structure by an unintentional movement
7. Stranding of people
8. Use of extending decks and gates
9. Use of single or double lanyards
10. Access and maintenance of required fall protection for persons while they are on the structure
11. Distance between transfer surfaces, both horizontally and vertically
12. Potential for movement of the MEWP platform due to changing loads
13. Compliance with the local authority having jurisdiction

Users shall direct and operators and occupants shall comply with approved procedures for this operation.

Electrical Hazards

When working in the area of energized conductors the user shall direct and the operator shall comply with the following requirements (6.8.12):

1. Stay at least 10 feet away from power lines with any part of their body, conductive object or any part of the MEWP
2. If working within 10 feet, stop and consult a qualified person with respect to electrical transmission and distribution to have appropriate measures taken such as de-energizing and grounding
3. If there is a question that the power lines may carry more than 50kV, consult a qualified person with respect to electrical transmission and distribution before proceeding
4. If working or approaching closer than explained above, it shall only be done by a qualified person. Only qualified persons may work on electric circuit parts or equipment that has not been de-energized.

Parking

The user shall direct and operator shall comply with the requirements in the proper procedures to park the MEWP at the end of daily work (6.8.39). Wherever possible, MEWPs should be parked in a secure compound or in a supervised area inaccessible to unauthorized persons. Keys shall be removed from the MEWPs when not in use. Keys should be issued only to authorized operators and retained by them until the end of the work period (6.8.39.1).

On completion of work, the MEWP shall be parked in the designated area with the engine or motor switched off, the work platform lowered to its stowed position, and the brakes applied. The MEWP shall not be left unattended in the elevated position unless approved by the manufacturer (6.8.39.2).