INTERNATIONAL STANDARD

ISO 18479-2

First edition
2016-06-01

Rough-terrain trucks — Non-integrated personnel work platforms —

Part 2: User requirements

Chariots tout-terrain — Élément central —

Partie 2: Exigences pour l'utilisateur

Reference number
ISO 18479-2:2016(E)

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

The committee responsible for this document is ISO/TC 110, *Industrial trucks*, Subcommittee SC 4, *Rough-terrain trucks*.

ISO 18479 consists of the following parts, under the general title *Rough-terrain trucks — Non-integrated personnel work platforms*:

— *Part 1: Design, safety requirements and verification*

— *Part 2: User requirements*

Introduction

ISO 18479 is one of a set of International Standards produced by ISO/TC 110/SC 4 as part of its program of work regarding standardization of terminology, general safety, performance, and user requirements for rough-terrain trucks (hereafter also referred to as *trucks*).

Rough-terrain trucks, when permitted, may be fitted with an integrated or non-integrated personnel work platforms which is designed to elevate occupants and materials to elevated work heights.

See ISO 11525-5 for user requirements for the interface between a rough-terrain truck and an integrated personnel work platform.

Rough-terrain trucks — Non-integrated personnel work platforms —

Part 2: User requirements

1 Scope

This part of ISO 18479, intended to be used together with ISO 18479-1 and ISO 10896-1, defines user requirements for rough-terrain trucks when fitted with a non-integrated personnel work platform (PWP) as an attachment. This includes non-integrated PWPs that have a means of being affixed to the truck forks.

NOTE National or local requirements can apply, which could be more stringent.

User requirements for rough-terrain trucks fitted with a personnel work platform having controls which affect travel or movement of the rough-terrain truck are not covered by this part of ISO 18479 (see ISO 18893).

2 Normative references

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

ISO 5057, *Industrial trucks — Inspection and repair of fork arms in service on fork-lift trucks*

ISO 10896-1, *Rough-terrain trucks — Safety requirements and verification — Part 1: Variable-reach trucks*

ISO 18479-1, *Rough-terrain trucks — Non-integrated personnel work platforms — Part 1: Design, safety requirements and verification*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 10896-1 and ISO 18479-1, and the following, apply.

3.1
personal fall protection equipment
PFPE
personal safety system consisting of a full-body harness and lanyard

Note 1 to entry: A *full-body harness* typically is a body support designed to contain the torso and distribute the fall arrest forces over at least the upper thighs, pelvis, chest and shoulders.

Note 2 to entry: A *lanyard* is a component consisting of a flexible rope, wire rope, or strap, which typically has a connector at each end for connecting to the body support and to a fall arrester, energy absorber, anchorage connector, or anchorage.

3.2
truck operator
competent and authorized person who controls the operation of the truck

4 General safety requirements

4.1 Principles

This part of ISO 18479 shall be supplemented by good management practices, safety controls and application of sound principles of safety, training, inspection, maintenance, application selection 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 the truck and occupants in the non-integrated PWP shall be responsible for the conformance with good safety practices.

NOTE Different operating conditions can require additional safety precautions, training, and special safe operating procedures.

The operation of any truck as well as the non-integrated PWP is subject to certain hazards that can be protected against only by the exercise of care and common sense. It is essential to have competent persons trained in the intended use, safe operation, maintenance and service of this equipment.

The user shall ensure that the operator understands that safe operation of the truck as well as the use of the non-integrated PWP is also the truck operator's responsibility.

The user shall ensure that the truck operator's mental or physical condition will not impair his/her ability to operate the truck.

4.2 Requirements for the truck when fitted with a non-integrated PWP

4.2.1 General

The user shall ensure that the precautions as given in 4.2 are taken when using a non-integrated PWP with a rough-terrain truck.

4.2.2 Operator's manual

The user shall ensure that the operator's manual and any additional safety manual provided by the manufacturer with the truck are always available to the truck operator and maintenance personnel.

4.2.3 Modifications or alterations

Except as provided below, no modifications or alterations to a truck or a non-integrated PWP that may affect its capacity, stability or safe operation of the truck fitted with a non-integrated PWP shall be made without the prior written approval of the original truck manufacturer or its successor. When the truck manufacturer or its successor approves a modification or alteration, the user shall be responsible, prior to operation, for ensuring that appropriate changes are made to information plate(s), documents, certificates, labels, tags, and operator's manual(s).

If the truck manufacturer is no longer in business and there is no successor, modifications or alterations to the truck shall be carried out under the following conditions:

a) the design, testing and implementation of the modification or alteration is made in accordance with ISO 18479-1 by a competent person;

b) a permanent record is kept of the design, tests and implementation of the modification or alteration;

c) appropriate changes are made to the information plate(s), documents, certificates, labels, tags, and operator's manual(s);

d) a permanent and readily visible label is affixed to the truck or non-integrated PWP stating the manner in which the truck or the non-integrated PWP has been modified or altered, together with the date of the modification or alteration, and the name of the person or organization responsible for the design, testing and implementation of the modifications.

4.2.4 Manufacturer's bulletins

The user shall comply with the applicable bulletins as directed by the responsible entity.

4.2.5 Truck operator qualifications

Users shall allow only competent and authorized persons to operate a truck. Truck operators shall be competent to operate the equipment safely, in addition to being trained in accordance with this part of ISO 18479.

4.2.6 Truck operator's responsibility for training

Before operating any truck, the truck operator shall be trained in accordance with 4.2.7 and 5.4.9, and shall have read and be familiar with the operator's manual(s) and any other safety information provided by the manufacturer and user on the particular truck being operated, the application and the environment in which the truck is to be used and any attachments used.

4.2.7 Truck operator training

4.2.7.1 Operator training programme

Personnel who are not considered competent to operate a truck shall operate the truck only as part of the operator training programme. This training shall be conducted under the direct supervision of a trainer.

The operator training programme shall be based on user policies, industry standards, local regulations and policies, operating conditions and the manufacturer's instructions.

NOTE Information on operator training is available from sources including users, truck manufacturers, government agencies dealing with employee safety, trade organizations of truck users, public and private organizations and safety consultants.

The training programme shall emphasize safe and proper operation that avoids injury to the truck operator and others and prevent property damage. The training program shall include the following items.

a) Information about the truck(s), the trainee will operate:

   1) characteristics of the truck(s), including possible variations between truck/non-integrated work platform combinations in the workplace;

   2) similarities to, and differences from, other mobile equipment and lifting devices, i.e. an aerial work platform;

   3) significance of information plates, load charts, warnings and instructions affixed to the truck;

   4) operating and safety instructions in the operator's manual for the truck and for the non-integrated PWP;

   5) instructions for inspections and maintenance to be performed by the operator;

   6) engine operation;

   7) type of drive system and its characteristics;

   8) methods of steering and manoeuvring;

   9) braking methods and characteristics;

   10) visibility, with and without loads;

11) load charts for trucks fitted with a non-integrated PWP, how to read and comprehend them and the limitations;

12) explanation of the stability triangle and other stability characteristics affected by stabilizers (if equipped), speed, acceleration, braking, raising or lowering a non-integrated PWP;

13) operation/manoeuvring with a non-integrated PWP affixed, sharp cornering, height, attachments, grade/ramps, centre of gravity of the non-integrated PWP and truck, counterbalance principle;

14) controls and instrumentation, including their location, function and method of operation and the identification of symbols;

15) load-handling capabilities and proper use of forks and other attachments;

16) refuelling and battery charging;

17) guards and protective devices for the specific type of truck;

18) how and when to use stabilizing devices, chassis levelling and other stability-related functions, and examples of improper operation and the risks associated with them;

19) how to correctly use the truck's operator restraints, e.g. seat belt, and other safety devices;

20) how to use personal fall protection equipment (PFPE) in the non-integrated PWP;

21) basic steps to take in the event of a tip-over, e.g. bracing for impact;

22) wheel loadings when loaded and unloaded;

23) when entering and exiting the operator's station, the need to always maintain three points of contact, i.e. one hand and two feet or two hands and one foot;

24) types of attachments and their applications/limitations, and;

25) other characteristics, if any, of the specific truck.

b) Operation and worksite-related topics:

1) surface conditions on which the truck is to be operated, loaded and unloaded, e.g. floor and ground conditions, ramps and inclines, trailers;

2) rules regarding non-integrated PWP positioning at height including ensuring that the truck chassis is level and that the truck is not to be driven with occupants in the non-integrated PWP;

3) pedestrian traffic in areas where the truck is to be used;

4) narrow-aisle and other confined-area operations;

5) potentially hazardous locations where the truck will be operated;

6) overhead obstructions that could crush occupants in the non-integrated PWP if contacted;

7) energized conductors;

8) ramps and gradients and how the stability of the truck could be affected by them;

9) enclosed environments and other areas where insufficient ventilation could result in a concentration of carbon monoxide gas from the engine exhaust;

10) other unique or potentially hazardous environmental conditions at the worksite that could affect other workers and the safe operation of the truck.

c) Information about the non-integrated PWP that occupants will occupy:

1) characteristics of the non-integrated PWP;

2) significance of information plates, load charts, warnings and instructions affixed to the non-integrated PWP;

3) operating and safety instructions in the operator's manual for the non-integrated PWP;

4) how to use personal fall protection equipment (PFPE) in the non-integrated PWP;

5) when entering and exiting the non-integrated PWP, the need to always maintain three points of contact, i.e. one hand and two feet or two hands and one foot;

6) instructions for inspections and maintenance to be performed by occupants in the non-integrated PWP.

4.2.8 Testing, retraining and enforcement

4.2.8.1 Testing

During training, performance and oral and/or written tests, these shall be given by the examiner to measure the skill and knowledge of the trainee in meeting the requirements of the operator training programme based on this part of ISO 18479. Examiners shall establish a pass/fail requirement for such tests. The user shall verify that the testing has been satisfactorily performed.

Following the completion of instruction and practice, all trainees shall be evaluated.

The evaluation shall be conducted on the specific work tasks including the following items:

a) preoperational inspection;

b) function test;

c) start-up;

d) travelling (including pedestrian safety);

e) non-integrated PWP selection and its proper securement to the attachment and forks;

f) non-integrated PWP positioning;

g) attachment of personal fall protection equipment (PFPE);

h) handling specific to docks, trucks, and rail cars;

i) driving on ramps and grades;

j) proper use of the truck's safety features;

k) shutdown;

l) refuelling/recharging;

m) operational maintenance.

Records shall be retained in accordance with 4.2.8.4.

4.2.8.2 Retraining

Operators shall be retrained when new equipment is introduced, existing equipment is modified, operating conditions change, different non-integrated PWPs are affixed, current training expires or an operator's performance is deemed unsatisfactory by the user.

The user shall determine the extent of operator retraining, as well as the need for retraining, taking into consideration regional or local requirements.

4.2.8.3 Enforcement

The user shall be responsible for enforcing the safe use of the truck according to the provisions of this part of ISO 18479.

4.2.8.4 Record keeping

Records of the person or persons trained in the operation of the truck shall be retained for at least the period of time the training is valid. In addition

a) the successful trainee shall be furnished with proof of training, verifying compliance with the operator training program based on this part of ISO 18479,

b) the records shall reflect the period of time when the training has not expired,

c) the records shall include the name of the entity providing training or retraining, the name of trainer(s) and examiner(s), clear identification of the truck(s) and attachment(s) covered by training, and the date of training, and

d) when requested, records shall be readily available that shows proof of training.

4.2.9 Inspection and maintenance

4.2.9.1 General

The inspection and maintenance of trucks shall be performed in accordance with the manufacturer's and user's recommendations, national regulations and the following practices:

a) a planned system for scheduled inspection, lubrication, maintenance and adjustment (as required) shall be established and followed;

b) only competent and authorized persons shall be permitted to maintain, repair, rebuild, adjust and inspect trucks and non-integrated PWPs, in accordance with the manufacturer's recommendations.

4.2.9.2 Preparation for inspection or repair

In preparation for, and prior to, starting inspection or repair of a truck:

a) wheel chocks or other means shall be applied to ensure the truck remains stationary;

b) manufacturer-approved methods/devices as outlined in the operator's manual shall be implemented to prevent unintentional movement of the truck/components before working on or around it;

c) the possibility of unintentional fuel escape shall be eliminated before any part of the fuel system is disconnected;

d) the battery shall be disconnected before working on the electrical system;

e) the possibility of unintentional stored energy release, e.g. from the accumulator or hydraulic system shall be eliminated.

4.2.9.3 Performance checks

4.2.9.3.1 Prior to conducting the performance checks, the user shall ensure that the pre-operation inspection has been performed satisfactorily per the manufacturer's instructions.

4.2.9.3.2 The user shall ensure that performance checks are conducted in an authorized area where safe clearances exist.

4.2.9.3.3 Before starting the performance check, the truck operator shall

a) be in the normal operating position using the operator restraint, e.g. seat belt,

b) disengage clutch, if the truck is so equipped,

c) apply service and parking brakes,

d) place directional control(s) in neutral, and

e) start the engine or power system.

4.2.9.3.4 Check that all control systems and safety devices, e.g. loading handling means, steering, brakes are functioning.

4.2.9.3.5 Before exiting the truck, the truck operator shall

a) stop the truck,

b) fully lower the load-handling means,

c) place directional control(s) in neutral,

d) apply the parking brake,

e) shut down the engine or power system, and

f) remove the key, if so equipped, or where other means such as a key pad is used to prevent the truck's use by unauthorised personnel, use this means to turn off the power.

4.2.9.4 Inspection and maintenance precautions

IMPORTANT — The following precautions shall be taken by the user when inspection and maintenance is performed:

a) **Avoid fire hazards and ensure that fire protection equipment is present in the work area. Do not use an open flame to check fluid levels or for leakage of fuel, battery electrolyte or other flammable liquids. Do not use open containers of fuel or flammable cleaning fluids for cleaning parts.**

b) **Properly ventilate the work area, including engine exhaust fumes.**

c) **Keep the work area clean and dry.**

d) **Do not make repairs or adjustments (e.g. welding structures) unless specifically authorized to do so in compliance with 4.2.3.**

e) **When refuelling, smoking in the area shall not be permitted, the engine shall be stopped and the truck operator shall not be in the truck.**

f) **Spillage of oil or fuel shall be cleaned appropriately.**

g) **Replace the oil and fuel tank caps before restarting the engine.**

h) **Avoid other potential hazards associated with the inspection and maintenance of the truck not addressed in this part of ISO 18479 or the operator's manual.**

4.2.9.5 Inspection and maintenance requirements

The user shall ensure the following:

a) brakes, steering mechanisms, control mechanisms, warning devices, guards and safety devices, lift and tilt mechanisms, axle stops, stabilizers (if equipped) and frame members are carefully inspected and maintained in a safe operating condition in accordance with 4.2.9.1 a);

b) if the truck and components are designed and approved for hazardous area operation, they receive special attention so that the maintenance performed achieves the original, approved, safe operating conditions;

c) fuel systems are inspected for leaks, damage and deterioration;

d) hydraulic systems are inspected and maintained in conformance with the manufacturer's recommendations, and hydraulic cylinders, valves and other hydraulic system components are checked to ensure that creep or leakage has not developed to the extent that would create a hazard or exceed the values given in ISO 10896-1:2012, 4.9.2.4;

e) truck safety, load charts, operation and maintenance information plates, tags and labels are maintained in a legible condition;

f) the truck is kept in a clean condition so as to minimize fire hazards and facilitate detection of loose or damaged parts;

g) replacement parts, including tyres, are interchangeable with and of a quality at least equal to the original parts, and that such parts are installed using all applicable safety and installation procedures;

h) if any repairs are necessary, action is taken to prevent the use of the truck until repairs have been completed;

i) industry safety practices are followed when fitting or removing tyres from rims, pneumatic tyres are completely deflated prior to their removal from rims, and a safety cage or restraining device is used while inflating tyres;

j) approved load-handling attachments are inspected, repaired or replaced in accordance with manufacturer's instructions, and;

k) forks are inspected, repaired or replaced in accordance with ISO 5057.

4.2.10 Hazardous environments

The user shall ensure that the truck selected is appropriate for the environment in which it is to be used.

Specific national or local regulations may apply for operation in potentially explosive atmosphere or underground.

5 Operating safety rules and precautions

5.1 Truck operator's responsibility for safety

The truck operator is responsible for the safe operation of the truck as well as protection of occupants in the non-integrated PWP.

Before operating any truck, the truck operator shall have read and be familiar with the operator's manual(s) and any additional safety manual provided by the manufacturer and user, for the specific truck being operated.

Trucks can be dangerous if not used properly. The truck operator shall follow safe working practices and be aware of hazardous conditions, utilizing all means, including those provided by the user, to protect himself/herself, occupants in the non-integrated PWP, other personnel in the area, the truck, and the local environment.

The truck operator shall be familiar with the operation and function of all controls and instruments before operating the truck.

The truck operator shall understand the load charts affixed to the truck before operating it. This shall include the load chart for the non-integrated PWP.

The truck operator shall know or determine the combined weight of the non-integrated PWP, occupants in the non-integrated PWP and tools/materials in the non-integrated PWP.

5.2 Visual inspection and functional tests

Before its use each day or at the beginning of each shift, the truck shall be given a visual inspection and functional tests, including

a) operating and emergency controls,

b) safety devices,

c) lights (if equipped),

d) brakes,

e) lift and tilt systems, load handling means, chains, cables and limit switches,

f) personal protective equipment (PPE) in the truck,

g) air, hydraulic and fuel systems,

h) cables and wiring,

i) loose, damaged or missing parts,

j) tyres and wheels,

k) instructions, warnings and control markings,

l) operator's manual(s),

m) structural components, including stabilizing devices,

n) the non-integrated PWP,

o) all load charts are visible and legible, and

p) other items specified by the manufacturer.

If the truck is found to be in need of repair or is unsafe in any way, or if it contributes to an unsafe condition, the matter shall be reported immediately to the users designated authority and the truck shall not be operated until it has been restored to safe operating condition.

Records should be kept of the visual inspection and functional tests.

5.3 General operating instructions

The truck operator shall:

a) Before starting to operate the truck:

   1) be in the normal operating position using operator restraint, e.g. seat belt;

   2) disengage clutch, if so equipped;

   3) apply service and parking brakes;

   4) place directional control in neutral;

   5) start the engine or power system.

b) Not start or operate the truck, or any of its functions or attachments, from any place other than the normal operating position (this does not apply to remote-controlled trucks).

c) Never put any part of the body, including hands and feet:

   1) outside the operator's compartment;

   2) into the load-handling structure;

   3) between the load-handling structure, the stabilizers and the truck;

   4) within the reach mechanism, or attachments of the truck.

d) Understand the limitations of the truck, and always operate the truck in a safe manner.

e) Not drive a truck directly up to anyone.

f) Safeguard pedestrians at all times, and exercise particular care during reversing and other operations during which pedestrians could step into the path of travel of the truck.

g) Not allow anyone to stand or pass under the elevated load-handling structure of the truck, whether empty or loaded.

h) Not permit passengers to ride on the truck, unless a designated passenger seat has been provided by the manufacturer, and, if the passenger seat is occupied, operate the truck in a manner that ensures safety of the passenger who shall:

   1) remain seated with seat belt fastened at all times except when entering and exiting;

   2) keep all parts of his/her body, including hands and feet, inside the passenger compartment;

   3) keep clear of, and make no contact with, the operating controls of the truck;

   4) not exit until the truck is properly shut down.

i) Check clearance carefully before driving under obstructions, e.g. electrical lines, bridges.

j) Check for underground utility services before using ground-engaging attachments.

k) Take reasonable steps to minimize the environmental impact of using the truck.

l) Take into account the effects of weather, e.g. wind, rain and snow, on the safe operation of the truck.

m) Before leaving the operating position:

   1) bring the truck to a complete stop;

   2) place directional control in neutral;

3) apply the parking brake;

4) fully retract and lower the boom and position forks or other attachments flat on the ground;

5) in addition, when leaving the truck unattended (see notes below), stop the engine and remove the key (if so equipped), or, in the case where another means such as a key pad is used to prevent use of a truck by unauthorised personnel, use this means to turn off the power.

NOTE 1 A truck is defined as *attended* when the truck operator is less than 7 m from the normal operating position, which remains in the truck operator's view.

NOTE 2 A truck is defined as *unattended* when the truck operator is 7 m or more from the normal operating position, which remains in the truck operator's view, or whenever the truck operator leaves the truck and it is not in the truck operator's view.

n) Maintain a safe distance from the edge of ramps, platforms and other working surfaces.

o) In areas classified as potentially hazardous, use only trucks approved for use in those areas.

p) Report all accidents involving personnel, the truck, building structures and equipment to the supervisor or as directed.

q) Not block access to fire exits, stairways or fire equipment, or park closer than 1,8 m to a railway line.

r) Maintain the appropriate minimum safe distance from energized power lines as defined by local, federal or national regulations.

If the truck is found to be in a condition that is unsafe in any way, the matter shall be reported immediately to the user and the truck shall not be operated until it has been restored to safe operating condition by a competent person.

5.3.1 Travelling

The truck operator shall:

a) Lock together for simultaneous operation the wheel brake pedals on trucks equipped with individual pedals before travel on public roads or when moving between worksites.

b) Not engage the differential lock on trucks so equipped, when driving on roads or at high speeds, or when turning, as, if locked when turning, there could be loss of steering control.

c) Comply with applicable traffic regulations.

d) Operate the truck under all travel conditions at a speed that will permit it to be brought to a stop in a safe manner.

e) Maintain a safe distance from personnel, vehicles and other equipment.

f) Yield the right-of-way to pedestrians and emergency vehicles, such as ambulances and fire trucks.

g) Not pass other equipment or vehicles travelling in the same direction at intersections, blind spots, or at other potentially dangerous locations.

h) Slow down and sound the audible warning device(s) at intersections and locations where vision is obstructed.

i) Keep a clear view of the path of travel, and, if the non-integrated PWP obstructs forward view, travel with the non-integrated PWP trailing and/or with the aid of an assistant.

j) Make starts, stops, turns and direction changes in a smooth manner.

k) Not indulge in stunt driving or "horseplay".

l) Ascend and descend ramps and gradients slowly and cautiously.

m) Travel straight up and down gradients and avoid turning across gradients.

n) Cross railroad tracks slowly and cautiously.

o) Avoid running over loose objects on the roadway surface.

p) Reduce speed to a safe level when negotiating turns, turning the steering wheel in a smooth, sweeping motion and — except when manoeuvring at very low speeds — at a moderate, even rate.

q) Not allow occupants to be in the non-integrated PWP when travelling.

5.3.2 Positioning the non-integrated PWP

a) Before starting to position the non-integrated PWP, the truck operator shall

   1) know or determine the combined weight of the non-integrated PWP, non-integrated PWP personnel, equipment and materials in the non-integrated PWP and confirm it does not exceed the truck's or attachment's actual capacity as indicated on the load chart(s),

   2) ensure that the frame is levelled within manufacturer's requirements before raising the boom or mast with the aid of an assistant, if necessary,

   3) ensure that the fork arms are reasonably horizontal and the truck is on substantially firm smooth, level and stable surface,

   4) when using stabilizing devices, ensure that the landing surface is firm and capable of supporting the truck and the load, and

   5) follow the manufacturer's instructions for operating stabilizer controls, if so equipped, as improper use of these controls could cause the truck to overturn.

b) When positioning the non-integrated PWP, the truck operator shall

   1) maintain communications with occupants in the non-integrated PWP,

   2) be aware of overhead obstructions that could crush occupants in the non-integrated PWP if contacted, and

   3) maintain a safe clearance from energized conductors.

5.4 Requirements for use of the non-integrated PWP

5.4.1 Approved use of the non-integrated PWP

The user shall ensure that the truck is only used for lifting of occupants when the truck manufacturer has approved the truck for such use, and the truck is equipped with the proper information plate(s) or load capacity chart specifically for the non-integrated PWP used.

Trucks equipped with side-swing, side-shift or side-tilt attachments with forks may be used with non-integrated PWPs only if the truck manufacturer has approved the truck and attachment for such use, and the truck is equipped with the proper information plate(s) or load capacity chart for such attachments and the non-integrated PWP.

Where fitted with side-tilted attachments, the user shall ensure that the means of preventing the attachment from tilting laterally when the non-integrated PWP is installed. Non-integrated PWPs shall not be used on trucks equipped with other types of powered attachments.

5.4.2 Capacity of the non-integrated PWP

The user shall ensure that the combined weight of the load and occupants in the non-integrated PWP does not exceed the capacity shown on the information plate(s) or load capacity chart.

5.4.3 Conditions for use

The user shall ensure that the truck and non-integrated PWP are appropriate for the worksite and operating conditions where they are to be used.

5.4.4 Operator's manual

The user shall ensure that the operator's manual and any additional safety manuals provided by the manufacturer of the non-integrated PWP are always available to occupants in the non-integrated PWP.

5.4.5 Non-integrated PWP design requirements

The user shall ensure that the non-integrated PWP meets the design requirements of ISO 18479-1 prior to use.

5.4.6 Use of overhead protection

The user shall determine if the use of overhead protection is required based on worksite and operating conditions.

5.4.7 Attachment of the non-integrated PWP

The user shall ensure that the non-integrated PWP is securely attached to the forks as specified by the non-integrated PWP manufacturer. The forks shall be a minimum of two-thirds the non-integrated PWP depth and not protrude beyond any part of the non-integrated PWP.

5.4.8 Damaged non-integrated PWPs

The user shall ensure that any non-integrated PWP that has been damaged is removed from service and tagged to warn against use. Repair of damaged non-integrated PWPs shall not be undertaken unless written approval has been obtained from the non-integrated PWP manufacturer.

5.4.9 Training

The user shall ensure that the truck operator and occupants in the non-integrated PWP have been trained in the use of such equipment in accordance with 4.2.7.

5.4.10 Truck operator's responsibility for the protection of occupants in the non-integrated PWP

The user shall ensure that the truck operator takes the following precautions to protect the occupants in the non-integrated PWP.

a) Only truck operators who have been trained in the lifting of occupants shall be allowed to lift occupants.

b) The truck shall have firm footing.

c) If the truck is equipped with stabilizers, the stabilizers shall be in position and have firm footing if so required on the information plate(s) or load capacity chart.

d) The truck shall not be driven while occupants are in the non-integrated PWP.

e) The number of occupants in the non-integrated PWP shall not exceed that stated in the non-integrated PWP information plate.

f) All occupants in the non-integrated PWP shall wear personal fall protection equipment (PFPE) as defined in 3.1 and the lanyard shall be properly attached to the anchorage(s) provided on the non-integrated PWP.

g) The load, including all occupants in the non-integrated PWP, material and equipment shall not exceed the maximum load as stated in the non-integrated PWP information plate, or the truck information plate(s) or load capacity chart, whichever is less.

h) The non-integrated PWP shall be lowered to ground level for occupants to enter and exit unless specific instructions for exiting a non-integrated PWP at an elevated position have been provided.

i) The truck and non-integrated PWP shall be level from side to side prior to lifting occupants.

j) The non-integrated PWP shall be level fore and aft prior to lifting occupants.

k) The lifting mechanism shall be operating smoothly through its entire lift range, both empty and loaded.

l) Lifting and lowering of occupants shall be done smoothly, with caution, and only at their request.

m) When in position to lift occupants, the parking brake shall be applied and the truck travel control(s) placed in neutral.

n) The path of non-integrated PWP travel shall be clear of hazards, e.g. scaffolds, overhead obstructions, and electrical conductors.

o) The truck operator shall not use the truck's sway control (frame levelling) when the non-integrated PWP is elevated.

p) The truck operator shall not tilt the non-integrated PWP while it is elevated.

q) The truck operator or occupants shall not allow personnel under the elevated non-integrated PWP, and shall not allow personnel in the area of the elevated non-integrated PWP unless required to assist the occupants in the non-integrated PWP.

r) When occupants are at the desired position, the truck operator shall

   1) maintain a means of communication with them,

   2) have visual contact of them, and

   3) remain in the normal operating position, except when it necessary to ensure that good communication is maintained and/or visual contact is made with them.

      If it is necessary for the truck operator to leave the normal operating position momentarily, the truck operator should stay within 7 m of the operator's station and return to the normal operating position as soon as possible.

s) Non-integrated PWP personnel shall be alerted prior to positioning the non-integrated PWP.

5.4.11 Occupants in the non-integrated PWP's responsibility while in the non-integrated PWP

The user shall ensure that occupants, while in the non-integrated PWP, take the following precautions.

a) Occupants shall not climb on any part of the truck while attempting to enter and exit the non-integrated PWP. If allowed, the non-integrated PWP manufacturers' and truck manufacturers' instructions for transferring occupants off the non-integrated PWP onto another structure shall be followed.

b) The required primary restraining means of guardrails shall be in place in the non-integrated PWP. All occupants in the non-integrated PWP shall wear personal fall protection equipment (PFPE) as defined in 3.1 and the lanyard shall be properly attached to the anchorage(s) provided on the non-integrated PWP. The number of lanyards attached to a single lanyard attachment point shall not exceed the manufacturer's indication. The lanyard shall limit free-fall to 1,8 m measured from the point of attachment in the non-integrated PWP to the point of attachment on the wearer.

c) If the non-integrated PWP is equipped with removable (i.e. complete removal, lowered etc.) guardrails and is approved for use by the truck manufacturer with one or more of the guardrails removed, the lanyard(s) shall only be attached to the anchorage(s) provided on the non-integrated PWP. The connection of a lanyard to a removable section of the non-integrated PWP shall not be permitted without approval from the truck manufacturer.

d) Any full body harness, lanyard, or deceleration device that has sustained permanent deformation or is otherwise damaged shall be replaced.

e) Occupants shall maintain firm footing in the non-integrated PWP floor and not use other means (e.g. railings, planks, ladders) in the non-integrated PWP for the purpose of achieving additional reach or height.

Bibliography

[1] ISO 18893, *Mobile elevating work platforms — Safety principles, inspection, maintenance and operation*

ICS 53.060

Price based on 16 pages