



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 42157.1-2023

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

越野叉车 非集成式人员工作平台 第1部分：设计、安全要求及验证

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Foreword

This document was issued on 17 March 2023 by the State Administration for Market Regulation; Standardization Administration of the PRC and takes effect on 1 October 2023.

It is a GB/T standard: recommended rather than compulsory, but it is the text a Chinese reviewer applies when assessing a submission.

1 Scope

GB/T 42157.1-2023 covers non-integrated personnel work platforms approved for use on rough-terrain trucks - a platform fitted and secured to the forks, the carriage or an attachment bracket rather than built into the machine - and sets the design and safety requirements for it, the verification of those requirements, and the information that goes out with it. The safety clause runs from general provisions and compliance, through the actual elevating capacity, to the design requirements for the platform itself. Verification is handled as a clause of its own: every safety measure in the design clause is expected to carry an obvious means of checking it, and where the check is not obvious the document says how it is to be performed. Use information covers the manufacturer's plate, which is marked

clearly and permanently, and the elevating capacity warning. A machine built to move pallets is being asked to hold people in the air on a bolted-on box, and the attachment to the carriage and the capacity that actually applies with that box fitted are what the clauses turn on. Part 1 of the series. Useful to platform makers, rough-terrain truck manufacturers, hire fleets and site safety engineers.

This document specifies the design specifications and safety requirements for non-integrated personal work platforms (PWP) approved for use in rough-terrain trucks. It can be fitted and secured to the forks, carriage or attachment bracket of a rough-terrain truck, to elevate the occupant (with materials and tools or without materials and tools) without any control in the platform to control movement to the working position.

The design, safety requirements and verification of rough-terrain variable-reach trucks have been stipulated in ISO 10896-1.

This document does not apply to personnel work platforms fitted with controls that affect the movement of rough-terrain trucks.

This document does not apply to non-integrated personnel work platforms manufactured before the publication date.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the version corresponding to that date is applicable to this document; for undated references, the latest version (including all amendments) is applicable to this document.

ISO 2867, Earth-moving machinery - Access systems

Note: GB/T 17300-2017, Earth-moving machinery - Access systems (ISO 2867:2011, IDT)

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

Note: GB/T 35205.1-2017, Rough-terrain trucks - Safety requirements and verification - Part 1: Variable-reach trucks (ISO 10896-1:2012, IDT)

ISO 12100, Safety of machinery - General principles for design - Risk assessment

and risk reduction

Qualified and authorized personnel in the non-integrated PWP who provide direction to the truck operator regarding the positioning of the non-integrated PWP.

4 Safety requirements and/or protective/risk reduction

measures

4.1 General

Non-integrated PWP shall comply with the safety requirements and/or protective/risk reduction measures of this Chapter.

In addition, non-integrated PWP shall be designed according to the criteria of ISO 12100 for relevant but not significant hazards not covered in this document.

If the rough-terrain truck manufacturer approves the use of a non-integrated PWP on its truck, it shall clearly indicate to the user the list of non-integrated PWP allowed to be used (i.e., the operating manual or a notice).

4.2 Compliance

The manufacturer of the rough-terrain truck shall ensure that the requirements described in this Chapter are met, as part of its approval for the use of the platform.

4.3 Actual elevating capacity

When the truck manufacturer approves the use of a non-integrated PWP, the total mass of the non-integrated PWP, occupants, equipment and materials shall not exceed the actual elevating capacity shown in the load curve of the truck.

Where a non-integrated PWP is used on a truck without a load curve, the total mass of the non-integrated PWP, occupants, equipment and materials shall not exceed one-third of the actual elevating capacity of the truck.

The non-integrated PWP shall be marked in accordance with 6.2.

4.4 Non-integrated PWP design requirements

4.4.1 Non-integrated PWP materials and dimensions

The non-integrated PWP shall be made of non-flammable materials, i.e., materials that will not sustain a flame after the removal of the ignition source.

The floor dimensions of the non-integrated PWP shall not exceed twice the load center distance shown on the nameplate of the truck, which shall be measured parallel to the longitudinal center plane of the truck. Also, the transport width shall not exceed the overall width of the truck (measured across the load-bearing tires) by 250 mm on either side.

4.4.2 Guardrail systems

4.4.2.1 Protective devices

All sides of the non-integrated PWP shall be fitted with protective devices to prevent the fall of occupant(s) or materials. The protective device shall be securely fixed on the non-integrated PWP, consisting of guardrails at least 1.0 m high, toe-guards at least 0.1 m high, and intermediate guardrails with a distance not greater than 0.55 m from either the guardrails or the toe-guards.

The intermediate guardrail can be replaced by multiple vertical posts with a maximum horizontal spacing no more than 180 mm. The horizontal spacing between vertical posts shall not exceed 120 mm.

The horizontal spacing of the toe-guards shall not be greater than 15 mm.

The guardrail shall be able to withstand a concentrated load of 890 N applied at the least favorable position and in the least favorable direction without permanent deformation.

The guardrail can be folded, but it shall be firmly fixed on the non-integrated PWP, and shall be equipped with a fixed pin to prevent accidental disengagement and loosening, or other equivalent locking devices.

4.4.2.2 Anchorage(s)

The non-integrated PWP shall be provided with an anchorage for connecting the safety rope, which shall meet the following requirements.

-- Each guard anchorage, as part of a fall arrest system or a fall restraint system, shall be capable of withstanding a static force of 16 kN without reaching ultimate strength. For anchorages rated for more than one occupant, the strength