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Rough-terrain trucks — User requirements —

Part 4:

Additional requirements for variable-reach trucks handling freely suspended loads

Chariots tout-terrain — Exigences pour l'utilisateur

ICS: 53.060

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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.

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ISO 11525-4 was prepared by Technical Committee ISO/TC 110, *Industrial trucks*, Subcommittee SC 4, *Rough-terrain trucks*.

ISO 11525 consists of the following parts, under the general title *Rough-terrain trucks — User requirements*:

- *Part 1: General requirements*
- *Part 2: Slewing variable-reach trucks*
- *Part 3: Lorry-mounted trucks*
- *Part 4: Additional requirements for variable-reach trucks handling freely suspended loads*
- *Part 5: Interface between rough-terrain truck and integrated personnel work platform*
- *Part 6: Agricultural applications*

Introduction

This International Standard is one of a set of standards produced by ISO/TC 110/SC 4 as part of its programme of work regarding standardization of terminology, general safety, performance and user requirements for rough-terrain trucks (hereafter also referred to as trucks) operating with freely suspended loads.

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Rough-terrain trucks — User requirements — Part 4: Additional requirements for variable-reach trucks handling freely suspended loads

1 Scope

This part of ISO 11525 defines user requirements relating to the use of non-slewing and slewing trucks operating with freely suspended loads.

It is intended to achieve the following:

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

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

General user requirements for trucks are given in ISO 11525-1.

User requirements for slewing trucks are given in ISO 11525-2.

This part of ISO 11525 is not applicable to flexible intermediate bulk containers as defined in ISO 21898.

2 Normative references

The following reference 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 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 10896-4, *Rough-terrain trucks – Safety requirements and verification – Part 4: Additional requirements for variable-reach trucks handling freely suspended loads*¹ ISO 11525-1, *Rough-terrain trucks – User Requirements – Part 1: General requirements*

ISO XXXXX, referred to in 5.4 u)3) and 5.5 b)1)

ISO 21898, *Packaging - Flexible intermediate bulk containers (FIBCs) for non-dangerous goods*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 10896-4 and ISO 11525-1, and the following apply:

3.1

fall zone

area below an elevated, or suspended, load, the attachment and the supporting boom structure

¹ Under preparation.

4 General safety requirements

4.1 Principles

This part of ISO 11525 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 shall be responsible for ensuring good safety practices.

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

The operation of any truck 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 is also the operator's responsibility.

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

4.2 Operator's manual

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

The user and/or the operator shall refer to the responsible entity should doubts on either the use of the truck or the interpretation of the operator's manual arise.

4.3 Modifications or alterations

Except as provided below, no modifications or alterations to a truck that may affect its capacity, stability or safe operation 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 the appropriate part of ISO 10896 by a competent person;
- b) a permanent record is kept of the design, test(s) 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 stating the manner in which the truck 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.

4.4 Manufacturer's bulletins

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

4.5 Operator qualifications

Users shall only allow 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 11525.

The operator may be required, in some local, regional, national markets, to undergo additional training beyond the scope of this part of ISO 11525. Users shall ensure that operators receive the necessary level of training as required.

4.6 Operator's responsibility for training

Before operating any truck, the operator shall be trained in accordance with 4.7 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.

4.7 Operator training

4.7.1 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 manufacturer's instructions.

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

The training programme shall emphasize safe and proper operation that avoids injury to the operator and others and prevents 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 the truck and others in the workplace;
 - 2) similarities to, and differences from, other mobile equipment;
 - 3) significance of information plate(s), the load chart(s), warnings and instructions affixed to the truck;
 - 4) operating and safety instructions in the truck's operator's manual;
 - 5) instructions for inspection 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, with and without loads;
 - 10) visibility, with and without loads;
 - 11) load charts, how to read and comprehend them and the limitations of the load chart due to the mass and load centres;

- 12) explanation of the stability triangle and other stability characteristics affected by speed, acceleration, braking, raising or lowering loads while travelling, operation/manoeuvring without loads, sharp cornering, height, attachments, grade/ramps, centre of gravity of the load and truck, combined load centre of gravity, counterbalance principle, machine level, and any features that can affect stability (i.e. rear axle locking system etc.);
 - 13) controls and instrumentation, including their location, identification, function, method of operation and identification of symbols;
 - 14) load-handling capabilities and proper use of forks and other attachments;
 - 15) refuelling and battery charging;
 - 16) guards and protective devices for the specific type of truck;
 - 17) how to use stabilizing devices, chassis levelling and other stability-related functions, and examples of improper operation and the risks associated with them;
 - 18) how to correctly use the operator restraint(s), e.g. seat belt, and other safety devices;
 - 19) basic steps to take in the event of a tip-over, e.g. bracing for impact;
 - 20) wheel loadings when loaded and unloaded;
 - 21) 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;
 - 22) types of attachments and their applications/limitations, and;
 - 23) 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, ground pressure, ramps and inclines, trailers;
 - 2) load handling at height and at ground level while picking and placing loads;
 - 3) levelling of the truck prior to picking and placing loads;
 - 4) pedestrian traffic in areas in which the truck is to be used;
 - 5) narrow-aisle and other confined-area operations;
 - 6) potentially hazardous locations where the truck will be operated;
 - 7) ramps and gradients and how the stability of the truck could be affected by them;
 - 8) enclosed environments and other areas where insufficient ventilation could result in a concentration of carbon monoxide gas from the engine exhaust;
 - 9) other unique or potentially hazardous environmental conditions at the worksite that could affect other workers and the safe operation of the truck.
- c) handling free-suspended loads:
- 1) how handling, and traveling with, a suspended load affects the trucks stability, i.e. operation on slopes, fast and sudden movements;