SLOVENSKI STANDARD
SIST ISO 6292:2012

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Nadomešča:
SIST ISO 6292:1999

Vozila za talni transport - Gnana vozila in vlačilci - Zahteve za zavore

Powered industrial trucks and tractors - Brake performance and component strength

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Chariots de manutention et tracteurs industriels automoteurs - Performance de freinage et résistance des éléments de frein

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Ta slovenski standard je istoveten z: ISO 6292:2008

ICS:

53.060	Industrijski tovornjaki	Industrial trucks

SIST ISO 6292:2012 **en**

2003-01.Slovenski inštitut za standardizacijo. Razmnoževanje celote ali delov tega standarda ni dovoljeno.

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INTERNATIONAL STANDARD

ISO 6292

Second edition
2008-11-01

Powered industrial trucks and tractors — Brake performance and component strength

Chariots de manutention et tracteurs industriels automoteurs — Performance de freinage et résistance des éléments de frein

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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 6292 was prepared by Technical Committee ISO/TC 110, *Industrial trucks*, Subcommittee SC 2, *Safety of powered industrial trucks*.

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This second edition cancels and replaces the first edition (ISO 6292:1996) and includes some of the contents of ISO 6292:1996 but has some major changes in approach to brake requirements for powered industrial trucks and tractors.

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The major changes in approach are:

— stopping distance methodology has been included. Braking reaction time, but not human reaction time, is included in the determination of the stopping distance. See ISO/TR 29944;

— addition of assessment of brake fade;

— groups A1 and A2 (see Table 2) to be categorised by truck rated capacity or laden mass.

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Introduction

Industrial trucks, tractors and burden carriers, generally referred to as trucks throughout, can satisfy the braking requirements of this International Standard by complying with either the stopping distance requirements or the drawbar drag requirements. Based on the requirements for brakes of rubber-tyred earthmoving machinery (ISO 3450), the stopping distance as a measurement value has been established. The brake performance is limited by consideration of the load. For further reference as to how the measurement of stopping distance and measurement of brake reaction time were derived, see ISO/TR 29944.

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Powered industrial trucks and tractors — Brake performance and component strength

1 Scope

This International Standard specifies performance, test methods, controls, control forces and component strength for brake systems fitted to

— powered industrial trucks of all capacities,

— industrial tractors with rated capacities up to and including 20 000 N drawbar pull,

— burden carriers, and

— industrial trucks handling freight containers,

as defined in ISO 5053.

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Loss of electrical power and loss of any other form of power assistance is not covered by this International Standard. Braking used in emergency situations (e.g. activating the emergency switch or control system shut down) is not covered in this International Standard.

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This International Standard only includes requirements for newly manufactured trucks.

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 3691-1:—[1)], *Industrial Trucks — Safety requirements and verification — Part 1: Self-propelled industrial trucks, other than driverless, variable-reach trucks and burden-carrier trucks*

ISO 5053, *Powered industrial trucks — Terminology*

1) To be published. (Revision of ISO 3691:1980)

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3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
actual truck velocity
v
actual measured velocity of the truck, just prior to the service brake being applied

3.2
brake fade
decrease of braking torque as a function of temperature and/or speed at constant application force

3.3
braking force
force at the contact surface between a wheel and the ground, produced by the effect of a braking system, which opposes the velocity or the tendency to movement of the vehicle

[ISO 611:2003, definition 9.11.3]

3.4
braking performance
performance of a braking system as measured by the braking distance in relation to the initial speed of the truck and/or by braking force and the capability to hold the truck at a standstill on a gradient

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3.5
braking system
combination of parts which fulfil one or more of the following functions:

— control (usually to reduce) a vehicle's speed,

— bring the vehicle to a halt or hold it stationary

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[ISO 611:2003, definition 3.2]

3.6
cold brakes
brake that meets one of the following conditions:

a) the temperature measured at the periphery of the disc or on the outside of the drum is below 100 °C;

b) in the case of totally enclosed brakes including oil-immersed brakes, the temperature on the outside of the housing is below 50 °C or within the manufacturer's specification;

c) the brake has not been operated in the previous 1 h.

3.7
control device
part of the braking system which initiates its operation

NOTE Control devices of industrial trucks are defined in ISO 3691-1:—, 5.4.2.2, 5.4.2.3 and 5.4.2.4.

3.8
fade test
⟨lining effectiveness⟩ test procedure consisting of one or more brake applications or the continuous dragging of the brake to generate heat with the effect that differences in braking performance, if any, can be observed

[ISO 611:2003, definition 8.4]

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3.9
lining bedding
lining burnishing
pre-test conditioning procedure for obtaining a specified degree of geometric, physical and chemical adaptation between the brake lining surface and the drum

3.10
laden mass
foreseen maximum laden truck mass likely to occur in the intended use of the truck, taking into account various combinations of optional equipment and the actual capacity applicable at the lift height specified for the tests (where relevant)

3.11
parking braking system
braking system allowing a vehicle to be held stationary mechanically, even on an inclined surface, particularly in the absence of the operator

3.12
service braking system
braking system allowing the operator to control, directly or indirectly, the speed of the truck or to bring the truck to a halt

3.13
stopping distance
s_0
distance travelled by the truck during the total braking time, i.e. distance travelled by the truck from the instant when the driver begins to actuate the control device until the instant when the truck stops

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3.14
test velocity
velocity greater than 90 % of the maximum designed truck velocity

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NOTE If the truck velocity is automatically reduced in certain load conditions or load positions (i.e. lift height dependent), this reduced velocity is the maximum travel velocity for that load condition/position.

3.15
unladen mass
foreseen minimum unladen truck mass is likely to occur in the intended use of the truck, taking into account various combinations of optional equipment

4 Requirements

4.1 General

The following requirements for brake systems apply.

4.2 Required brake systems

The truck shall have the following brake systems:

— a service brake system;

— a parking brake system.

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