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Introduction

This draft standard is based on national and international discussions. Your comments on this draft are invited and will assist in the preparation of the consequent standard.

For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

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- All comments should be submitted online at <https://standardsdevelopment.bsigroup.com/>. You will need to register in order to comment.

Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/ Figure/Table/Note	Type of comment	Comment (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	

DRAFT INTERNATIONAL STANDARD

ISO/DIS 6563

ISO/TC 22/SC 40

Secretariat: UNI

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2023-11-16

Voting terminates on:
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Rear load carrier for wheeled vehicle — Requirements and test methods

Porte-charges arrière pour véhicule routier — Exigences et méthodes d'essai

ICS: 43.100; 43.040.60

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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.

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).

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For an explanation of the voluntary nature of standards, 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 www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 22, *Road Vehicles*, Subcommittee SC 40, *Specific aspects for light and heavy commercial vehicles, busses and trailers*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Rear load carrier for wheeled vehicle — Requirements and test methods

1 Scope

This standard specifies the minimum functional safety requirements for rear load carriers intended for attachment on the rear of passenger cars and light commercial vehicles with a maximum gross weight up to 3,5 t as defined in ISO 1176. Incomplete and supplemental rear load carriers are not subjects of this standard.

It establishes technical specifications and test methods, which offer both the users of the rear load carriers and road users, a minimum level of functional safety when the rear load carriers are being used in accordance with the manufacturer's instructions.

Moreover, the requirements of this standard complement the directives from ECE-R 26 and its successive amendments concerning these products.

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 edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 1103, *Road vehicles — Coupling balls for caravans and light trailers — Dimensions*

ISO 1431-1, *Rubber, vulcanized or thermoplastic — Resistance to ozone cracking — Part 1: Static and dynamic strain testing*

ISO 3888-2, *Passenger cars — Test track for a severe lane-change manoeuvre — Part 2: Obstacle avoidance*

EN ISO 179-1, *Plastics — Determination of Charpy-impact properties — Part 1: Non-instrumented impact test*

EN ISO 4210-2, *Cycles — Safety requirements for bicycles — Part 2: Requirements for city and trekking, young adult, mountain and racing bicycles*

EN ISO 4892-2, *Plastics — Methods of exposure to laboratory light sources — Part 2: Xenon-arc lamps*

EN ISO 9227, *Corrosion tests in artificial atmospheres — Salt spray tests*

EN 15194, *Cycles — Electrically power assisted cycles — EPAC Bicycles*

EN 82079-1, (VDE 0039-1), *Preparation of instructions for use — Structuring, content and presentation — Part 1: General principles and detailed requirements (IEC 82079-1)*

3 Terms and definitions

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

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1

rear load carrier

device intended for carrying bicycles, cargo, luggage and goods on rear of a wheeled vehicle

3.2

mass of the rear load carrier

m_s

mass of the rear load carrier including means of attachment and all mounted parts in kg

Note 1 to entry: Mounted parts such as lighting, adapters, straps etc.

3.3

mass of the test load

m_{tb}

mass of representative test load, in kg

3.4

total mass

$m_{\text{total}} = m_s + m_{tb}$

total mass of the system comprising rear load carrier and payload without mounted parts on vehicle, in kg

Note 1 to entry: Mounted parts, e.g, trailer device.

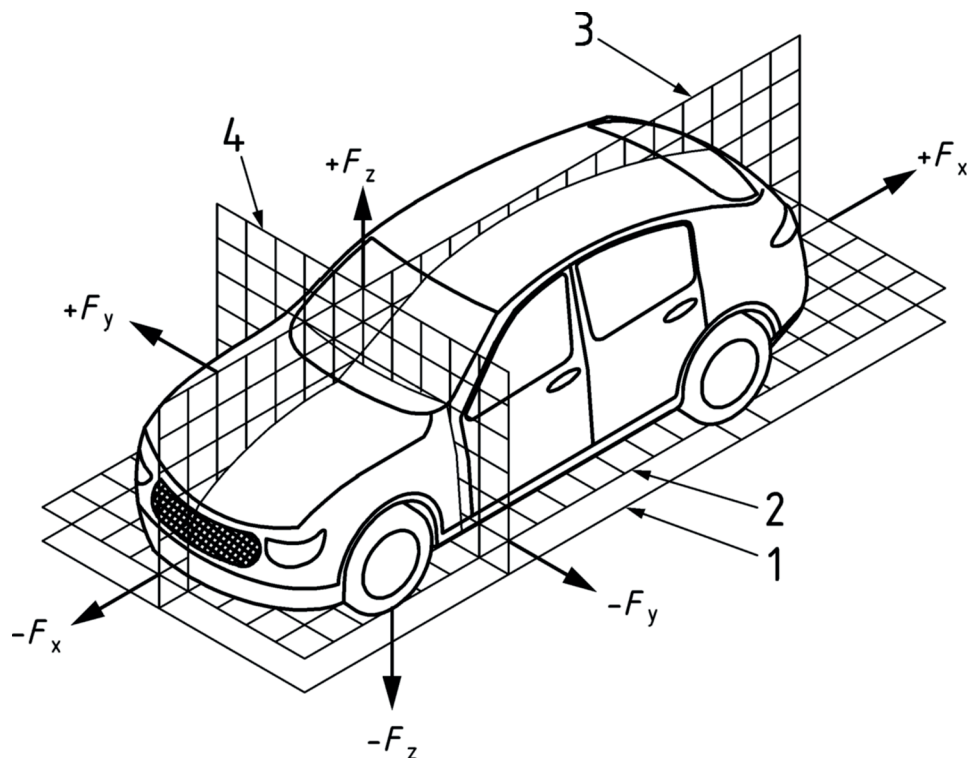
Note 2 to entry: the total mass is working in the total center of gravity.

3.5

lifting force

F_z

force applied during testing to simulate the vertical components of the force caused by the vertical effect of the load upward, $+F_z$, and downward, $-F_z$, as defined in [Figure 1](#), in N



Key

- 1 carrying surface
- 2 zero-Z-plane (horizontal reference plane)
- 3 zero-Y-plane (vertical longitudinal reference plane)
- 4 zero-X-plane (vertical lateral reference plane)

Figure 1 — Application directions of the forces F_x , F_y and F_z

3.6 longitudinal force

F_x

longitudinal force applied during testing to simulate the horizontal components of the forces directed forwards, $-F_x$, and backwards, $+F_x$, in the direction of travel, which are caused by the load as defined in [Figure 1](#), in N

3.7 lateral force

F_y

force applied during testing to simulate the horizontal components of the lateral forces directed to the right, $+F_y$, and left, $-F_y$, in the direction of travel, which are caused by the load as defined in [Figure 1](#), in N

3.8 tensile force of the strap

F_s

<textile strap, metal strap> force applied during testing to simulate the elongation behaviour caused by the load acting on the straps, in N

3.9 residual deflection at a given point

D

difference between the position before and after each step of the test, for the contact points of the rear load carrier to vehicle, in mm

Note 1 to entry: A contact point can be a supporting point, a fixation point or all other connecting points.

3.10 displacement of the load

d

difference between the position of each load on the rear load carrier at each attachment point before and after the relevant test, in mm

3.11 relative displacement of the internal components of rear load carriers

e

difference between the position of the component that ensures the interface to the vehicle, and the component of the rear load carrier on which it is mounted, before and after the relevant test, in mm

3.12 functional safety

transport of the rear load carrier so as to ensure road safety and prevent loss

4 Classification related to the fastening

Depending on the attachment to the vehicle, the following distinctions are made:

- a) fitted to the trunk lid or rear wall (see [Figures C.1](#) and [C.2](#) or [Annex G](#));
- b) fitted on the hatch (see [Figures C.3](#) and [C.4](#) or [Annex G](#));
- c) fitted on coupling ball or plate (see [Figures C.5](#), [C.5.1](#) and [C.6](#));
- d) fitted on spare wheel (see [Figure C.7](#));
- e) fitted on and in chassis (see [Figure C.8](#)).

5 Requirements and test methods

5.1 General test conditions

5.1.1 Measurement uncertainties

Unless otherwise stated, the measurement uncertainties based on the Newton values shall correspond to the following:

— Forces and torques	±5 %;
— Masses and weights	±2 %;
— Dimensions	±2 %;
— Angles	±2°;
— Time (e.g. test duration)	±5 s;
— Temperatures	±5 °C;

- Pressure $\pm 5\%$;
- Speed $\pm 5\%$.

5.1.2 Description and test load

Static: The test shall be carried out with the permissible maximum payload indicated by the manufacturer, but with 30 kg payload as a minimum, unless otherwise specified for individual tests (i.e. boxes, baskets). In the case of a rear load carrier for bicycles, the test shall be carried out with one test bicycle per rail according to the data in [Appendix A](#).

The force shall be applied according to [Table 1](#).

Table 1 — Force application points

rear load carrier	The force application occurs	position of the center of gravity
Bike rear carrier	At the center of gravity of each bikes	See Annex A
Ski/snowboard rear carrier	At the center of gravity of each pairs of ski/snowboard	Equivalent substitute device can be used
Other rear load carrier	At the center of gravity of the equipment carried	Equivalent substitute device can be used

Dynamic: The test shall be carried out with the permissible maximum payload indicated by the manufacturer including the relevant safety factors, but with 30 kg payload as a minimum, unless otherwise specified for individual tests. In the case of a rear load carrier for bicycles, the test shall be carried out with one test bicycle per rail according to the data in [Appendix A](#).

5.1.3 Interfaces to the vehicle

5.1.3.1 Coupling balls

The coupling balls shall exhibit the following properties for the test below:

- a) According to ISO 1103;

NOTE Coupling balls with a diameter of minimum 49,00 mm can also occur in road traffic owing to wear (see VdTÜV-Information Sheet 712 and UNECE-R 55).

- b) Metallically bare surface without paint-based surface treatment;
- c) Degreased;
- d) Steel.

5.1.3.2 Other interfaces on the vehicle to other attachments

The data of the interface manufacturer, e.g. for spare wheel holders, shall be observed.

5.1.4 Test samples and sequence

Five test samples shall be used for the tests. The sequence of the tests shall follow [Figure 2](#).

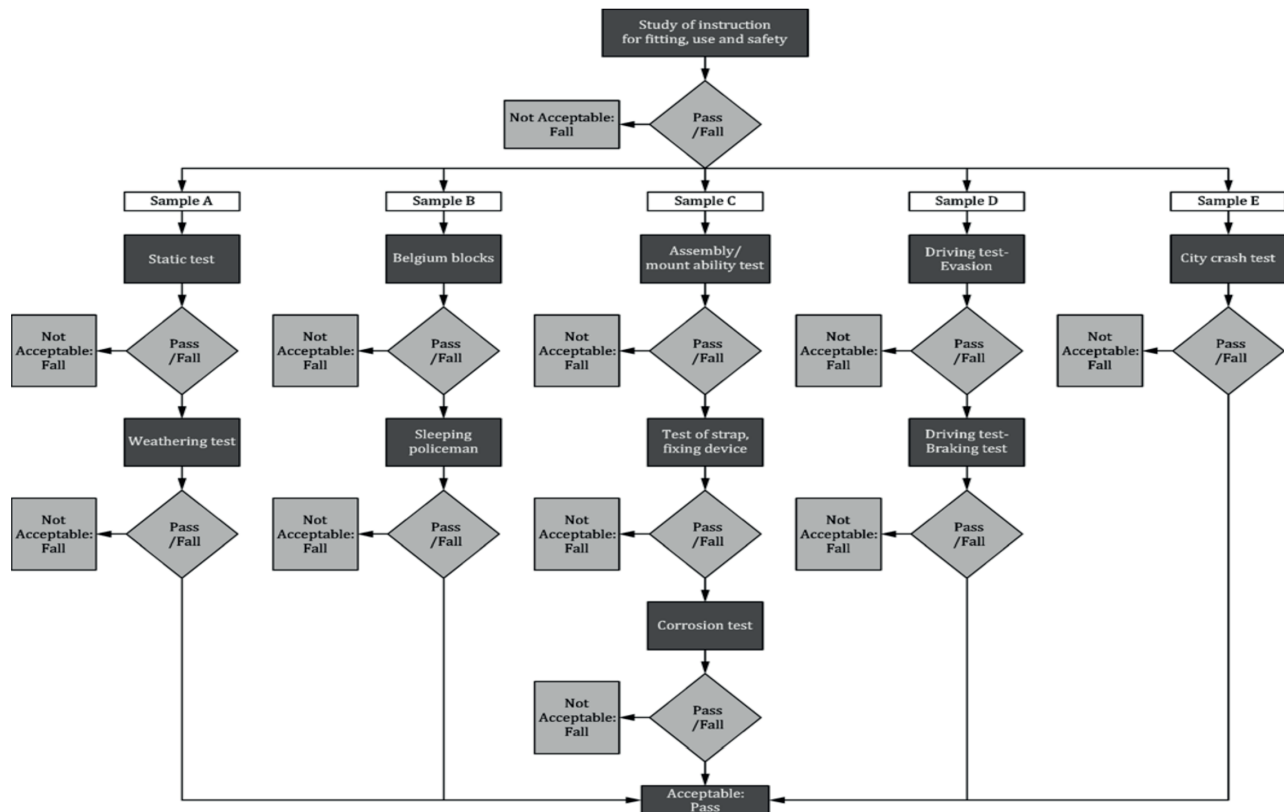


Figure 2 — Test sequence

The following test sequence shall be followed:

- a) Study of the instruction for fitting and use of leaflet (according to EN IEC/IEEE 82079-1);
- b) Preconditioning, mountability and assembling tests;
- c) Dynamic tests:
 - 1) Belgium blocks test;
 - 2) Speed bump test (sleeping policeman);
 - 3) Evasion test;
 - 4) Braking test;
 - 5) City crash test.

NOTE Deviations from the test sequence shall be documented.

- d) Preconditioning of the specimen used for static tests;
- e) Static tests:
 - 1) Lifting force $+F_z$ and $-F_z$;
 - 2) Longitudinal force $+F_x$ and $-F_x$;
 - 3) Lateral force $+F_y$ and $-F_y$;