SLOVENSKI PREDSTANDARD

oSIST prEN 14872:2005

december 2005

Bicycles - Accessories for bicycles - Luggage carriers

ICS 43.150

Referenčna številka
oSIST prEN 14872:2005(en)

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

FINAL DRAFT
prEN 14872

September 2005

ICS 43.150

English Version

Bicycles - Accessories for bicycles - Luggage carriers

Bicyclettes - Accessoires pour bicyclettes - Porte-baggages

Fahrräder - Zubehör für Fahrräder - Gepäckträger

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Ref. No. prEN 14872:2005: E

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Foreword

This European Standard (prEN 14872:2005) has been prepared by Technical Committee CEN/TC 333 “Bicycles”, the secretariat of which is held by UNI.

This European Standard is currently submitted to the Formal Vote.

Introduction

This European Standard has been developed in response to demand throughout Europe, and the aim has been to ensure that luggage carriers manufactured in compliance with it will be as safe as is practically possible. The tests have been designed to ensure the strength and durability of the luggage carrier, demanding high quality throughout and consideration of safety aspects from the design stage onwards.

The scope has been limited to safety considerations, and has specifically avoided standardisation of components.

1 Scope

This European Standard specifies safety and performance requirements for the design and testing of luggage carriers intended for permanent mounting above or adjacent to the wheels of cycles and lays down guide lines for instructions on the use and care of such luggage carriers.

This European Standard does not apply to removable luggage (for example handlebar bags or baskets that are not permanently attached).

2 Normative references

The following referenced documents are indispensable for the application of this European Standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 14344, *Child use and care articles — Child seats for cycles — Safety requirements and test methods*

3 Terms and definitions

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

3.1
cycle
vehicle that has at least two wheels and is propelled solely or mainly by the muscular energy of the person on that vehicle, in particular by means of pedals (from prEN 14764)

3.2
luggage carrier
device, including containers such as baskets, that is mounted and permanently attached above and/or adjacent to the rear wheel(s) (in the case of a rear luggage carrier) or front wheel(s) (in the case of a front luggage carrier) of a cycle and that is exclusively designed for carrying luggage or children in child-seats

3.3
luggage-carrier platform
flat part of the luggage carrier upon which loads may be placed or fixed, or the flat top rail from which panniers may be hung or the bottom part of a container (for example a basket). If the luggage carrier is equipped with more than one such area, only the uppermost is considered

3.4
luggage-carrier platform length, L
maximum overall length of the luggage-carrier platform (flat part)

3.5
visible crack
crack which results from a test where that crack is visible to the naked eye (from prEN 14764)

3.6
fracture
separation into two or more parts (from prEN 14764)

4 Classification

The manufacturer shall classify the carrier with the maximum load capacity for which it is intended, taking into consideration any restrictions laid down in Table 1.

If the carrier is intended to carry a child seat, designed to clamp onto the platform of a normal rear luggage carrier, classified for 9 kg to15 kg according to EN 14344, the maximum load capacity of the luggage carrier shall be at least 18 kg.

If the carrier is intended to carry a child seat, designed to clamp onto the platform of a normal rear luggage carrier, classified for 9 kg to 22 kg according to EN 14344, the maximum load capacity of the luggage carrier shall be at least 25 kg.

In Table 1, the maximum limit (if any) for the load capacity is indicated for each type of luggage carrier that falls within the scope of this European Standard. The applicable requirements and test methods differ according to the type and load capacity.

The following terminology is used in the table:

— normal rear carrier: rear carrier supported by fixings to the bicycle frame close to the rear wheel axle;

— frame-mounted beam carrier: rear carrier that is structurally a cantilever, fixed to the bicycle frame in front and/or above the rear wheel. It may also be fixed to the seatpost, in addition to the frame, but receives no support from the bicycle frame near to the axle of the rear wheel;

— seatpost-mounted beam carrier: rear carrier that is structurally a cantilever, fixed to the seatpost of the bicycle without additional fixings to the frame;

— above wheel front carrier: front carrier with a platform upon which loads can be placed above the front wheel;

— low-load front carrier: front carrier that is exclusively designed for carrying a pair of panniers, where the "platform" is a pair of rails (from which the panniers hang) one each side of the wheel and not more than 200 mm above the lower points of attachment of the carrier near to the axle of the front wheel;

— front-mounted container: container such as a basket, that is mounted and permanently attached above the front wheel of a bicycle and that is exclusively designed for carrying luggage.

Table 1 — Maximum load capacity for the types of luggage carrier within the scope of this European Standard

	Rear luggage carriers			**Front luggage carriers**		**Front-mounted containers**
	Normal	Beam		Above wheel	Low-load	
		Seatpost-mounted	Frame-mounted			
Maximum load capacity, kg	-	10 kg	25 kg	10 kg	18 kg	10 kg

5 Requirements and test methods

5.1 General

In general, for static and fatigue tests, each type of test shall be conducted on a new test sample, but if only one test sample is available, it is permissible to conduct all of the tests on the same sample with the sequence of testing in the order: fatigue tests, static tests.

In the strength tests all components shall be in the fully-finished condition.

The test frequency shall be stated in all fatigue test reports.

5.2 Tolerances

Unless otherwise stated the following tolerances shall be used:

All forces shall have an accuracy of ± 5 %.

All masses shall have an accuracy of ± 1 %.

All dimensions shall have an accuracy of ± 1,0 mm.

All time measurements shall have an accuracy of ± 1 s.

All angles shall have an accuracy of ± 1º.

All frequencies and amplitudes shall have an accuracy of ± 5 %.

5.3 Sharp edges

Exposed edges that could come into contact with the rider's or a transported person’s hands, legs etc., during normal riding or normal handling and normal maintenance shall be neither sharp nor designed such that injuries can arise when the bicycle is used correctly. Spring ends shall be rounded or fitted with protective caps.

5.4 Security of safety-related fasteners

5.4.1 Security of screws

Any screws used in the assembly of the luggage carrier or screws used to attach the luggage carrier shall be provided with suitable locking devices, for example, lock-washers, lock-nuts, or stiff nuts.

5.4.2 Minimum failure torque

The minimum failure torque of screws for the fastening of the luggage carrier to the cycle shall be at least 50 % greater than the manufacturer's recommended tightening torque.

5.5 Crack detection methods

Standardised methods may be used to emphasise the presence of cracks where visible cracks are specified as criteria of failure in tests specified in this European Standard.

NOTE For example, suitable dye-penetrant methods are specified in ISO 3452.

5.6 Dimensions

The dimensions of luggage carriers are not specified, except as follows:

Normal rear luggage carriers of load classes 18 and 25, to which a child-seat could be attached (see Clause 4), shall have a luggage-carrier platform width of between 120 mm and 175 mm.

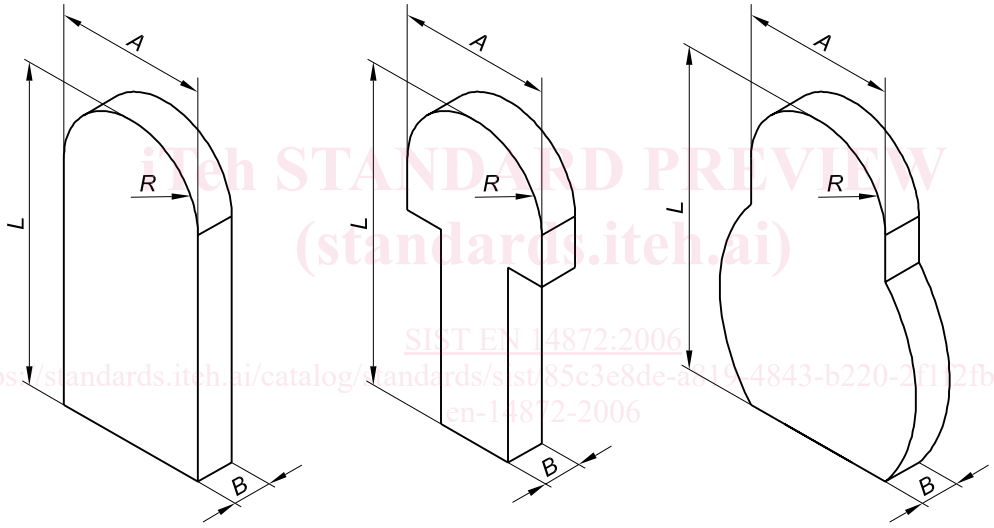
5.7 Protrusions

5.7.1 Requirement

5.7.1.1 Exposed protrusions

Any rigid exposed protrusion longer than 8 mm (see *L* in Figure 1) after assembly shall terminate in a radius, *R* (see Figure 1), of not less than 6,3 mm. Such protrusions shall have a major end dimension, *A*, not less than 12,7 mm and a minor dimension, *B*, not less than 3,2 mm.

Dimension in millimetres



Key

$R \geq 6,3$

$A \geq 12,7$

$B \geq 3,2$

Figure 1 — Examples of minimum dimensions of exposed protrusions (these apply when *L* is greater than 8 mm)

5.7.1.2 Screw threads

A screw thread that is an exposed protrusion shall be limited to a protrusion length of one major diameter of the screw beyond the internally threaded mating part.

Dimensions in millimetres

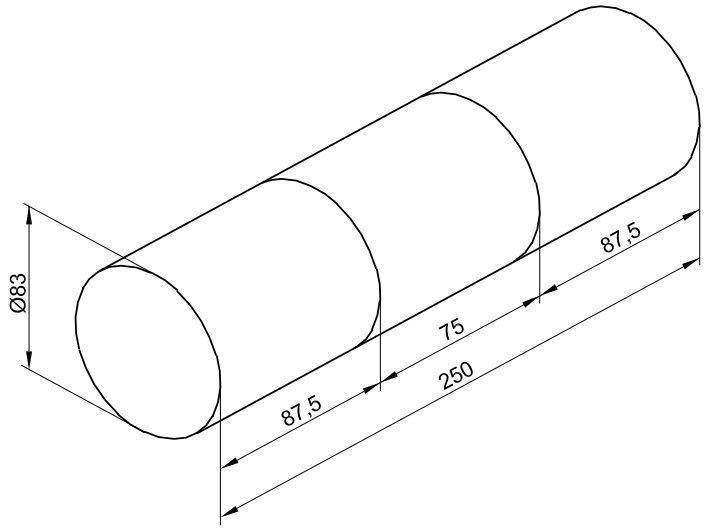


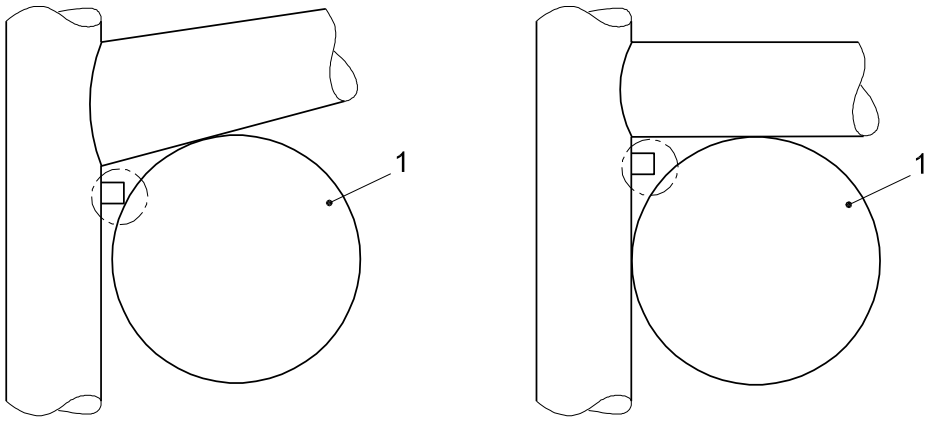
Figure 2 — Exposed protrusion test cylinder

5.7.2 Test method

When attached to a fixture resembling a bicycle, or attached to a bicycle, conduct the test with a protrusion test cylinder (which simulates a limb) having the dimensions shown in Figure 2.

Manoeuvre the test cylinder in all possible attitudes towards any rigid protrusion on the luggage carrier. If the central 75 mm long section of the cylinder contacts the protrusion, that protrusion shall be considered to be an exposed protrusion and it shall comply with 5.7.1.1.

Examples of protrusions which need and do not need to comply with the requirements are shown in Figure 3.



Key

1 test cylinder

2 protrusion shall comply

3 protrusion needs not to comply

Figure 3 — Examples of protrusions