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Carrier cycles - Part 7: Cargo trailers

Lastenfahrräder - Teil 7: Anhänger

Cycles utilitaires - Partie 7 : Remorques cargo

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EN 17860-7:2024 (E)**European foreword**

This document (EN 17860-7:2024) has been prepared by Technical Committee CEN/TC 333 “Cycles”, the secretariat of which is held by UNI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2025, and conflicting national standards shall be withdrawn at the latest by June 2025.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document is part of standard series consisting of the following parts:

- EN 17860-1:2024, Carrier cycles — Part 1: Terms and definitions
- EN 17860-2:2024, Carrier cycles — Part 2: Lightweight single track carrier cycles — Mechanical aspects
- EN 17860-3:2024, Carrier Cycles — Part 3: Lightweight multi track carrier cycles — Mechanical aspects
- prEN 17860-4:2024, Carrier Cycles — Part 4: Heavy weight carrier cycles — Mechanical and functional aspects
- EN 17860-5:2024, Carrier cycles — Part 5: Electrical aspects
- prEN 17860-6:2024 Carrier Cycles — Part 6: Passenger transport
- EN 17860-7:2024, Carrier cycles — Cargo trailers

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

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Introduction

This document gives requirements and test methods for mechanical and functional aspects for cargo trailers.

This document has been developed in response to demand throughout Europe. Its aim is to provide a standard for the assessment of mechanical aspects for cargo trailers of a type which are excluded from type approval by Regulation (EU) No. 168/2013.

Because of the diversity of geometries and solutions of trailers not all requirements and test methods in this document may apply to every trailer.

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EN 17860-7:2024 (E)**1 Scope**

This document specifies safety requirements and test methods for single and multi-axle cargo trailers and their connecting devices.

This document applies to cargo trailers with a maximum gross vehicle weight of 600 kg.

This document is not applicable to trailers for the transportation of passengers, usually children, and for types of trailers that use a fifth wheel for connecting to the front cycles (semi-trailer) as listed in Table 1 in this document.

Table 1 — Types of cycle trailers

Type of trailer	Applicability of this document
Multi track single axle	Applicable
Multi track multi axle	Applicable
Single track with single axle or multi axle	Not applicable
Fifth wheel trailer (semi-trailer) with single axle or multi axle	Not applicable
Usage	
Cargo	Applicable
People/children/pet	Not applicable

NOTE 1 Requirements and test methods for electrical assistance for electrically assisted cargo trailers are covered by EN 17860-5:2024.

NOTE 2 For cargo trailers having a maximum gross weight of up to 60 kg, see EN 15918:2011 + A2 Cycles – Cycle trailers.

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.

EN 15918:2011+A2:2017, *Cycles — Cycle trailers — Safety requirements and test methods*

EN 17860-1:2024, *Carrier cycles — Part 1: Terms and definitions*

EN 17860-2:2024, *Carrier cycles — Part 2: Lightweight single track carrier cycles — Mechanical aspects*

EN 17860-3:2024, *Carrier cycles — Part 3: Lightweight multi track carrier cycles — Mechanical aspects*

FprEN 17860-5:2024, *Cycles — Carrier cycles — Part 5: Electrical aspects*

EN ISO 4210-2:2023, *Cycles — Safety requirements for bicycles — Part 2: Requirements for city and trekking, young adult, mountain and racing bicycles (ISO 4210-2:2023)*

EN ISO 4210-3:2023, *Cycles — Safety requirements for bicycles — Part 3: Common test methods (ISO 4210-3:2023)*

EN ISO 4210-4:2023, *Cycles — Safety requirements for bicycles — Part 4: Braking test methods (ISO 4210-4:2023)*

EN ISO 4210-6:2023, *Cycles — Safety requirements for bicycles — Part 6: Frame and fork test methods (ISO 4210-6:2023)*

EN ISO 4210-8:2023, *Cycles — Safety requirements for bicycles — Part 8: Pedal and drive system test methods (ISO 4210-8:2023)*

ISO 6742-3:2023, *Cycles — Lighting and retro reflective devices — Part 3: Installation and use of lighting and retro reflective devices*

ISO 14878:2015, *Cycles — Audible warning devices — Technical specification and test methods*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 17860-1:2024 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/>

4 Cargo trailer cycle combination

The recommended maximum gross vehicle weight of the cargo trailer is:

- 600 kg when the trailer is pulled by a multi track carrier cycle;
- 350 kg when the trailer is pulled by a bicycle, EPAC or single track carrier cycle.

5 General vehicle requirements

5.1 Accuracy tolerances of test conditions for brake tests and strength tests

EN 17860-2:2024, 5.2 applies.

5.2 Design of the surface requirements

EN 17860-2:2024, 5.1 applies.

5.3 Securing and strength of safety-relevant fasteners

EN 17860-2:2024, 5.2 applies.

5.4 Mudguards/wheel covers

5.4.1 Requirement

The requirements in accordance with EN ISO 4210-2:2023, 4.11 apply.

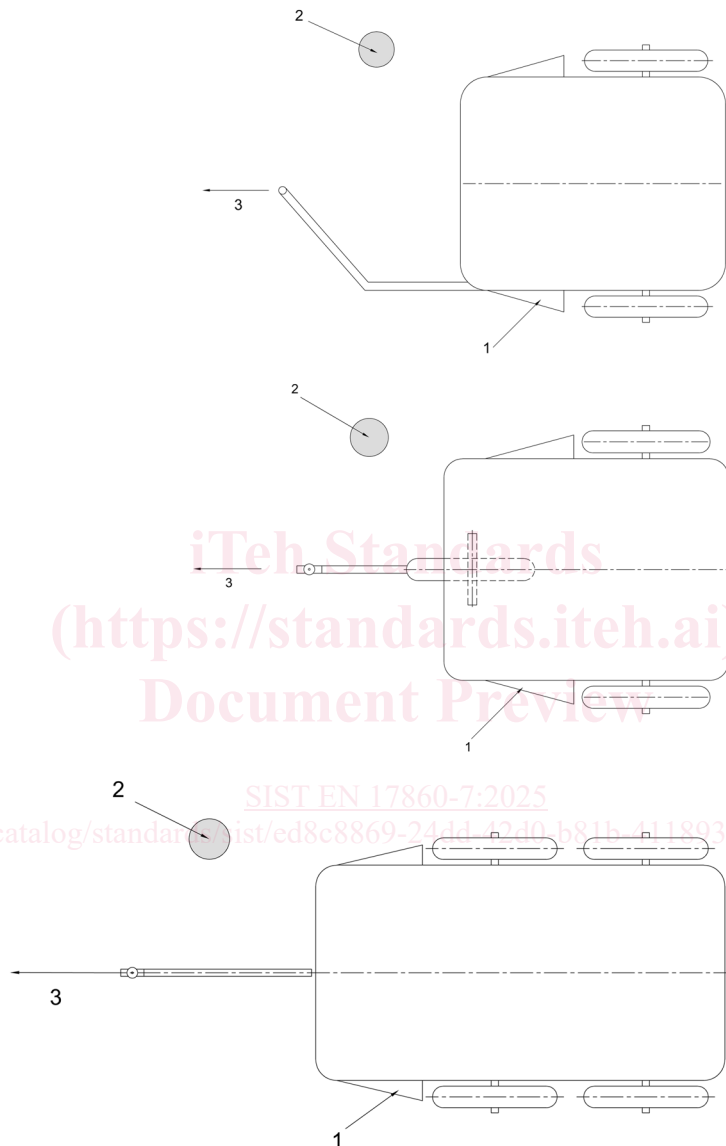
5.4.2 Test method

The test shall be conducted in accordance with EN ISO 4210-3:2023, 4.2.

EN 17860-7:2024 (E)

5.5 Deflection device

Cargo trailers shall be designed in accordance with EN 15918:2011+A2:2017 such that a vertical obstacle cannot be caught between a wheel and the body of the cargo trailer when the cargo trailer is drawn forwards past any such obstacle. An example is shown in Figure 1.



Key

- 1 deflection devices
- 2 vertical obstacle
- 3 moving direction

Figure 1 — Example of the deflection devices for single and multi axle cargo trailers

The width of cargo trailer in front of the wheels shall not be less than the distance between the tyre centrelines and be shaped so that the cargo trailer is deflected sideways when drawn past a vertical obstacle with a minimum height of 750 mm and diameter of 90 mm (see Figure 1).

The deflection device shall be strong enough not to collapse if a trailer with maximum payload is hitting the obstacle.

5.6 Position of payload

The position of the transported load shall be so that the cargo trailer can be safely operated and braked in any loading and operating situation, the cyclist in the front is not hindered and vision is not limited. A rear-view mirror on the towing cycle is recommended if the visibility to the rear is limited due to the normal positioning of the payload or the vehicle's construction.

The manufacturer shall specify in the user manual the recommended load distribution on the cargo trailer so that the load distribution does not result in the centre of gravity of the cargo trailer being too far back.

The manufacturer shall try to achieve an even distribution of the wheel load and the lowest possible overall centre of gravity.

5.7 Recommendations for loading areas/load securing

Design recommendations can be found in EN 17860-3:2024, 5.7.

5.8 Braking

5.8.1 General

A cargo trailer shall be equipped with at least two brake systems which are operated simultaneously. The brake systems shall function without jamming.

Cargo trailers with a total mass of up to 100 kg (including payload) are exempted from overrun brakes only if the connection point to the cycle is not higher than 400 mm above the ground. The manufacturer shall confirm the braking performance according to the test in 5.8.3 with the lightest possible cycle available. Manufacturers shall recommend the cycle type (including brake type, frame type, tire profile and empty weight of the cycle) according to the results of the braking distance test to their customers for operations.

The requirements in accordance with Table 2 shall be met.

NOTE See EN ISO 4210-4:2023, 4.6.5.7, Point h), Test method — Simple check on the test track.

5.8.2 Hand-operated brakes

Hand-operated brakes used in the intended operational mode shall comply with clause 6.2 of EN 17860-2:2024.

5.8.3 Requirements for test method on a test track

The general requirements in accordance with 5.8.1 apply.

The requirements in accordance with a), b) and c) shall be met.

- a) When testing on a test track, the cargo trailer shall meet the requirements listed in Table 2 in both fully laden condition as specified by the manufacturer and in unladen condition. A city cycle having a functional brake on the front and the rear wheel shall be used as a reference cycle to perform this test. Independently of the trailer, the cycle shall achieve the braking performance as described in EN ISO 4210-4:2023.

If the cargo trailer has several loading areas, the payload shall be distributed according to the manufacturer's recommendations.