

DIN 79010



ICS 43.150

**Cycles –  
Transportation bikes and cargo bikes –  
Requirements and test methods for single- and multi-track cycles,  
English translation of DIN 79010:2020-02**

Fahrräder –  
Transport- und Lastenfahrrad –  
Anforderungen und Prüfverfahren für ein- und mehrspurige Fahrräder,  
Englische Übersetzung von DIN 79010:2020-02

Cycles –  
Bicyclettes de transport et utilitaires –  
Exigences et méthodes d'essai pour les vélos usage général avec des charges élevées,  
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In case of doubt, the German-language original shall be considered authoritative.

*A comma is used as the decimal marker.*

## Start of application

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## Foreword

This standard includes safety requirements within the meaning of the *Produktsicherheitsgesetz* (ProdSG) (German Product Safety Act).

This document has been prepared by Working Group NA 112-06-01-01 AK “Transportation bikes and cargo bikes” of *DIN-Normenausschuss Sport- und Freizeitgerät* (DIN Standards Committee Sports Equipment).

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

Where this standard has been identified by the *Ausschuss für Produktsicherheit* (German Committee for Product Safety) and reference to it has been published in the *Gemeinsames Ministerialblatt* (German Joint Ministerial Gazette) by the *Bundesanstalt für Arbeitsschutz und Arbeitsmedizin (BAuA)* (German Federal Institute for Occupational Safety and Health), it is to be presumed that transport bikes and cargo bikes which comply with this standard fulfil the relevant health and safety requirements.

The vibration loads on the user resulting from the surface can lead to the impairment of the health and safety of the user. The determination of these vibration loads was not taken into consideration in this standard. Refer to DIN EN 1032 for information on determining the vibration loads

## **Introduction**

Taking into account the competences and experience of this Working Group, the scope of this document has been limited to permissible total weights of 250 kg for single-track and 300 kg for multi-track transportation bikes and cargo bikes.

The members of the Working Group expressly welcome the latest developments in the logistics and mobility sector and the development of heavy-duty transportation bikes and cargo bikes with permissible total weights of over 250 kg and 300 kg.

This standard is not in conflict with the development of heavy-duty transportation bikes and cargo bikes with dimensions larger than those outlined in this document or with a higher permissible total weight.

## 1 Scope

This standard defines general requirements and test methods for single-track transportation bikes and cargo bikes with a maximum width of 1 m and a maximum permissible total weight of 250 kg, also with electric power assistance (with a continuous rated power of max. 250 W and a speed of up to 25 km/h), for transporting goods and passengers.

This standard additionally defines general requirements and test methods for multi-track transportation bikes and cargo bikes with a maximum width of 2 m and a maximum permissible total weight of 300 kg, also with electric power assistance (with a continuous rated power of max. 250 W and a speed of up to 25 km/h), for transporting goods and passengers

This standard does not apply to cycle trailers in accordance with DIN EN 15918 or cycles in accordance with DIN EN ISO 4210, DIN EN ISO 8098 (cycles for young children), DIN EN 16054 (BMX cycles) and DIN EN 15194 (EPAC cycles).

## 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.

DIN EN 15194:2018-11, *Cycles — Electrically power assisted cycles — EPAC bicycles*

DIN EN 15918:2011+A1:2017, *Cycles — Cycle trailers — Safety requirements and test methods*

DIN EN ISO 4210-1, *Cycles — Safety requirements for bicycles — Part 1: Terms and definitions (ISO 4210-1:2014)*

DIN EN ISO 4210-2:2015-12, *Cycles — Safety requirements for bicycles — Part 2: Requirements for city and trekking, young adult, mountain and racing bicycles (ISO 4210-2:2015)*

DIN EN ISO 4210-3:2015-01, *Cycles — Safety requirements for bicycles — Part 3: Common test methods (ISO 4210-3:2014)*

DIN EN ISO 4210-4:2015-01, *Cycles — Safety requirements for bicycles — Part 4: Braking test methods (ISO 4210-4:2014)*

DIN EN ISO 4210-6:2015-12, *Cycles — Safety requirements for bicycles — Part 6: Frame and fork test methods (ISO 4210-6:2015)*

DIN EN ISO 4210-7:2015-01, *Cycles — Safety requirements for bicycles — Part 7: Wheels and rims test methods (ISO 4210-7:2014)*

DIN EN ISO 4210-8:2015-01, *Cycles — Safety requirements for bicycles — Part 8: Pedal and drive system test methods (ISO 4210-8:2014)*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions in DIN EN ISO 4210-1 and the following apply.

DIN and DKE provide terminology databases for use in standardization at the following addresses:

- DIN-TERMinology Portal: available at <https://www.din.de/en/services/din-term>
- DKE-IEV: available at <http://www.dke.de/DKE-IEV>

#### 3.1

##### **transportation bike and cargo bike**

cycle specifically for transporting goods and/or passengers

Note 1 to entry: Referred to below as “cargo bike”.

#### 3.2

##### **single-track cargo bike**

cycle on which the wheels are arranged precisely one behind the other in a plane

#### 3.3

##### **multi-track cargo bike**

cycle on which the wheels are located in more than one plane and which has at least two axles and three wheels

#### 3.4

##### **parking brake**

brake system which, after applying one or more brake(s), remains constantly in the applied condition without further action

#### 3.5

##### **unladen weight**

weight of the cargo bike with standard equipment (according to the manufacturer's description) for normal operation

#### 3.6

##### **payload**

sum of the weight of the rider and the weight of the loaded goods/passengers

#### 3.7

##### **maximum permissible total weight**

sum of the unladen weight plus the maximum payload

#### 3.8

##### **seat**

devices for the rider and passengers that are not designed in accordance with the principle of a cycle saddle

#### 3.9

##### **largest applicable test body**

largest test body of the three available standard sizes (D9, D18 or D22), whose size or maximum mass is equal to or greater than the size or mass defined by the manufacturer for transported passengers

#### 3.10

##### **integral guard**

guard that is part of a seat or transportation bike or which is pre-assembled with another required and essential part of the seat (e.g. a footrest) and which cannot be removed or can only be removed with a tool



**3.11****additional guard**

guard that is always supplied with the seat but which does not correspond to the definition of an integral guard

**3.12****footrest**

facility for supporting the feet of the transported passenger

**3.13****access zone**

zone that a transported passenger can be expected to reach with their hands or feet

**3.14****restraint system**

facility with which the seated transported passenger is restrained in a safe position on the seat

**3.15****crotch restraint**

facility that runs between the legs of the transported passenger to prevent the transported passenger from slipping forwards

**3.16****passenger cab**

interior compartment with a fixed roof construction which includes the surrounded cab with its interior dimensions and its interior trims, seats and seat benches for transporting passengers

Note 1 to entry: Rain covers for an open box are not fixed roof constructions.

**3.17****vehicle-related axis system**

axis system bound to the spring vehicle mass

Note 1 to entry: The x- and y-axes lie in the horizontal plane, where the x-axis is oriented parallel to the direction of motion and the y-axis is oriented sideways vertically to the median longitudinal plane of the vehicle; the z-axis is oriented upwards.

**3.18****wheelbase**

distance between the contact centres of the vehicle tyres measured parallel to the x-axis; at rest, the vehicle is stood on a horizontal surface; the steer angles are zero

**3.19****track**

distance between the tyre contact centres of the two wheels of a single-wheel axle on multi-track vehicles measured parallel to the y-axis; at rest, the vehicle is stood on a horizontal surface

## 4 Classification

To distinguish between the different designs and drive types, the cargo bikes shall be classified as listed in Table 1 in this standard.

**Table 1 — Classification**

		<b>Class A</b> Passenger transportation	<b>Class B</b> Goods transportation	<b>Class C</b> Passenger and goods transportation
<b>Type 1</b> (single-track)	—	1A	1B	1C
	electric	1Ae	1Be	1Ce
<b>Type 2</b> (multi-track)	—	2A	2B	2C
	electric	2Ae	2Be	2Ce

## 5 Requirements

### 5.1 Accuracy tolerances of the test conditions

Unless stated otherwise, accuracy tolerances based on the nominal values shall be as follows.

Forces and torques	0/+5 %
Masses and weights	±1 %
Dimensions	±1 mm
Angles	±1°
Duration	±5 s
Temperatures	±2 °C
Pressure	±5 %
Speed	±10 %

### 5.2 Design of the surface

#### 5.2.1 Requirement

Protruding edges and corners that can come into contact with the rider's hands and legs, etc. during normal vehicle operation or normal handling or during normal maintenance work shall not be sharp and shall be e.g. deburred, broken, rolled or machined using comparable methods.

Functionally-related sharp edges and points are permissible as long as they do not represent an impermissible risk of injury.

Rough surfaces shall not represent a risk of injury. Protruding screw threads in all accessible parts of the apparatus shall be permanently covered, e.g. with cap nuts. Nuts and screw heads that protrude less than 8 mm are permissible in inaccessible parts provided they are burr-free.

Corners, edges and protruding parts in the free space of the user that protrude more than 8 mm and are not covered by adjacent surfaces that are located a maximum of 25 mm from the end of the protruding part shall be rounded or chamfered. The radius of the rounding or the width of the chamfer shall be at least 0,5 mm.