



**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[SIST EN 15918:2011+A2:2017](https://standards.iteh.ai/catalog/standards/sist/8ea25d15-4893-4bd6-a3b0-3fac1bfe7fbc/sist-en-15918-2011a2-2017)

<https://standards.iteh.ai/catalog/standards/sist/8ea25d15-4893-4bd6-a3b0-3fac1bfe7fbc/sist-en-15918-2011a2-2017>

EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 15918:2011+A2**

March 2017

ICS 43.150

Supersedes EN 15918:2011+A1:2013

English Version

## Cycles - Cycle trailers - Safety requirements and test methods

Cycles - Remorques pour cycles - Exigences de sécurité et méthodes d'essai

Fahrräder - Fahrradanhänger - Sicherheitstechnische Anforderungen und Prüfverfahren

This European Standard was approved by CEN on 18 June 2011 and includes Amendment 1 approved by CEN on 20 November 2012 and Amendment 2 approved by CEN on 6 February 2017.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

<b>Contents</b>	<b>Page</b>
European foreword.....	4
Introduction .....	5
<b>1 Scope</b> .....	<b>6</b>
<b>2 Normative references</b> .....	<b>6</b>
<b>3 Terms and definitions</b> .....	<b>6</b>
<b>4 General test requirements</b> .....	<b>7</b>
4.1 Classification of cycle trailers .....	7
4.2 Sampling.....	8
4.3 Order of tests .....	8
4.4 Tolerances .....	8
4.5 Test bodies.....	9
4.6 Access zone for type C cycle trailers.....	9
<b>5 Materials</b> .....	<b>9</b>
5.1 Chemical properties for type C cycle trailers (Migration of certain elements).....	9
5.2 Flammability for type C cycle trailers.....	9
<b>6 Construction</b> .....	<b>10</b>
6.1 General.....	10
6.2 Drawbar load and height.....	10
6.3 Deflection device.....	10
6.4 Hazardous edges and protrusions.....	11
6.4.1 Requirements.....	11
6.4.2 Test methods .....	11
6.5 Shear and compression points for type C cycle trailers.....	11
6.6 Indirect contact with the wheels for type C cycle trailers.....	11
6.6.1 Requirements.....	11
6.6.2 Test methods .....	11
6.7 Front protection for type C cycle trailers .....	12
6.7.1 Requirements.....	12
6.7.2 Test methods .....	12
6.8 Entrapment for type C cycle trailers .....	12
6.8.1 Requirements.....	12
6.8.2 Test methods .....	12
6.9 Small parts for type C cycle trailers.....	13
6.10 Folding mechanism .....	14
6.10.1 Requirements.....	14
6.10.2 Test method .....	14
6.11 Dimensions of the headroom for type C cycle trailers.....	14
6.11.1 Requirements.....	14
6.11.2 Test method .....	14
6.12 Parking brake.....	15
6.12.1 Requirements.....	15
6.12.2 Test method .....	16
6.13 Stability.....	16
6.13.1 Requirements.....	16

6.13.2	Stability test for type C2 cycle trailers .....	16
6.14	Lighting systems, reflectors and other conspicuity aids .....	16
6.15	Frame and chassis .....	17
6.15.1	Requirements.....	17
6.15.2	Test method.....	17
6.16	Drawbar and connecting device.....	19
6.16.1	Requirements.....	19
6.16.2	Test method.....	20
6.17	Secondary safety device .....	20
6.17.1	Requirements.....	21
6.17.2	Test method.....	21
6.18	Strength of the restraint system.....	21
6.18.1	Requirements.....	21
6.18.2	Test method .....	21
6.19	Rigidity of the passenger cab for type C cycle trailers only .....	22
6.19.1	Requirements.....	22
6.19.2	Test method.....	22
7	Test report .....	23
8	Manufacturer's instructions .....	23
9	Marking .....	24
9.1	Marking requirement.....	24
9.2	Durability.....	24
Annex A (normative)	Test bodies .....	25
Annex B (normative)	Calculation of maximum possible deceleration.....	28
Annex C (normative)	Test order.....	31
C.1	General .....	31
C.2	Dynamic tests.....	31
C.3	Static tests .....	31
	Bibliography .....	32

**EN 15918:2011+A2:2017 (E)****European foreword**

This document (EN 15918:2011+A2:2017) 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 September 2017, and conflicting national standards shall be withdrawn at the latest by September 2017.

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

This document includes Amendment 1 approved by CEN on 20 November 2012 and Amendment 2, approved by CEN on 6 February 2017.

This document supersedes A2 EN 15918:2011+A1:2013 A2.

The start and finish of text introduced or altered by amendment is indicated in the text by tags A1 A1 and A2 A2.

According to the CEN/CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

<https://standards.iteh.ai/catalog/standards/sist/8ea25d15-4893-4bd6-a3b0-3fac1bf77bc/sist-en-15918-2011a2-2017>

## Introduction

This European Standard does not cover single wheel trailers due to the time necessary for test method validation, even though this type is a significant share of the market.

## iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN 15918:2011+A2:2017](https://standards.iteh.ai/catalog/standards/sist/8ea25d15-4893-4bd6-a3b0-3fac1bf7fbc/sist-en-15918-2011a2-2017)

<https://standards.iteh.ai/catalog/standards/sist/8ea25d15-4893-4bd6-a3b0-3fac1bf7fbc/sist-en-15918-2011a2-2017>

## EN 15918:2011+A2:2017 (E)

## 1 Scope

This European standard specifies safety requirements and test methods for two track cycle trailers (i.e. with one or two wheels) and their connecting devices.

These cycle trailers are intended for the conveyance of cargo loads or up to two passive child passengers (i.e. not pedalling), both of whom are capable of sitting unaided and neither of whom weighs more than 22 kg.

The maximum permitted weight of such a cycle trailer, including cargo and/or passenger(s), does not exceed 60 kg.

This standard is not applicable to trailer cycles (one or two-track trailer for the transportation of one or two pedalling passengers, usually children, with device for connection behind cycle) and for type L trailers for professional use or with a single wheel (single track trailer) according to Table 1.

## 2 Normative references

**[A1]** The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies. **[A1]**

EN 71-1:2005+A9:2009, *Safety of toys — Part 1: Mechanical and physical properties*

EN 71-3, *Safety of toys — Part 3: Migration of certain elements*

EN 1888, *Child care articles - Wheeled child conveyances - Safety requirements and test methods*

**[A1]** EN ISO/IEC 17025, *General requirements for the competence of testing and calibration laboratories (ISO/IEC 17025)* **[A1]**

## 3 Terms and definitions

For the purposes of this document, 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

### 3.2 cycle trailer

one or two track trailer for the conveyance of loads and/or passive passengers, who do not contribute towards propulsion of the vehicle, with device for connection behind a cycle

Note 1 to entry: Classification, see 4.1.

### 3.3 parking brake

device to maintain the vehicle in a stationary position

### 3.4 access zone

part of a type C cycle trailer that can be touched by an occupant



**3.5****connecting device**

part of the cycle trailer that is fixed to the towing bicycle

**A1 3.6****pitch pivot**

transverse horizontal axis of rotation between connecting device and trailer, which allows the vertical displacements of the trailer relative to the cycle that occur at changes in gradient of the road surface **A1**

**A1 3.7 A1****total weight**

weight of the cycle trailer plus load and/or children

**A1 3.8 A1****nominal load**

either the maximum weight of children and/or cargo specified by the manufacturer or the difference between the total weight indicated by the manufacturer and the empty weight of the cycle trailer whichever is the greater

**A1 3.9 A1****standard drawbar load**

vertical load measured at the pitch pivot of the connection to the bicycle, which results when the cycle trailer has been loaded up as intended with the nominal load

**A1 3.10 A1****largest applicable test body (standards.iteh.ai)**

largest of the three available standard sizes of test body (D9, D18 or D22) that is equal to or greater than the passenger height or weight limit specified by the manufacturer

**A1 3.11 A1****visible crack**

crack which results from a test where that crack is visible to the naked eye

**A1 3.12 A1****fracture**

unintentional separation into two or more parts

**A1 3.13 A1****surface flash**

rapid spread of flame over the surface of a material without ignition of its base structure, reaching the first marker thread, which may or may not be severed, or either vertical edge of the test specimen

[EN 1103:2005]

**4 General test requirements****4.1 Classification of cycle trailers**

The classification of cycle trailers is given in Table 1.

Table 1 — Types of cycle trailers

Number of tracks	For the transportation of:	
	Children <sup>a</sup> (C)	Other loads (L)
1 (single track)	—	—
2 (two tracks)	C2 <sup>b</sup>	L2
<sup>a</sup> In case the cycle trailer is convertible into e.g. a stroller, see EN 1888. <sup>b</sup> EXAMPLE Type C2 is a two track cycle trailer for the transportation of children and luggage.		

## 4.2 Sampling

A single trailer shall be subjected to all of the following tests.

For all cycle trailers, where the superstructures have a variable design, all combinations of equipment shall meet all relevant requirements. Accessories shall, if included by the manufacturer, be included in the tests.

In cases where the test method allows an element of discretion on the part of the tester, the tester shall use his discretion to produce a situation which he considers most likely to result in a failure.

## 4.3 Order of tests

**iTeh STANDARD PREVIEW**  
(standards.iteh.ai)

The tests shall be performed in the following order:

- inspection test;
- dynamic test;
- static test.

SIST EN 15918:2011+A2:2017  
<https://standards.iteh.ai/catalog/standards/sist/8ea25d15-4893-4bd6-a3b0-3fac1bfe7fbc/sist-en-15918-2011a2-2017>

For the order of tests, see Annex C.

## 4.4 Tolerances

Unless stated otherwise, the tolerances given in Table 2 shall apply to nominal values.

Table 2 — Tolerances

	Tolerances
Forces and torques	0 / + 5 %
Masses and weights	± 1 %
Dimensions	± 1 mm
Angles	± 1°
Time duration	± 5 s
Temperatures	$\boxed{A_2} \pm 5 \text{ °C } \boxed{A_2}$
Pressures	± 5 %
Speeds	± 5 %
Accelerations	± 5 %

## 4.5 Test bodies

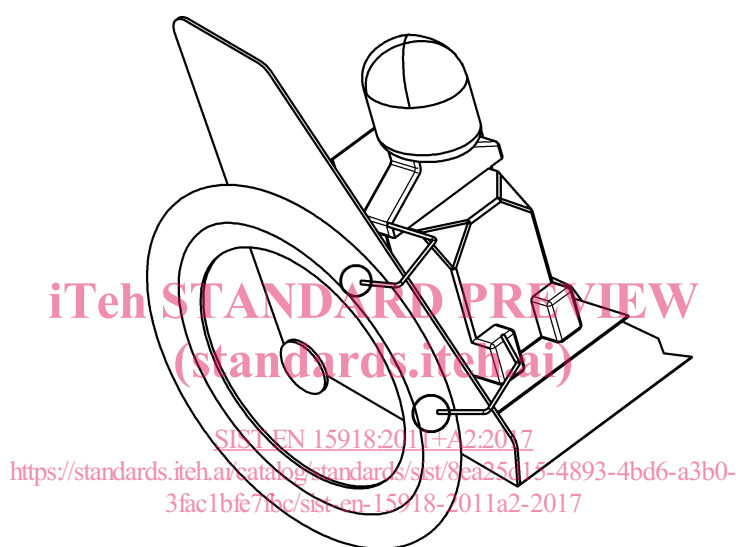
The test bodies shall be designed as shown in Annex A.

## 4.6 Access zone for type C cycle trailers

Fix the largest applicable test body in the cycle trailer seat. Remove all removable parts of the cycle trailer cover. Use the test arm and test leg fixed at the shoulder and at the thigh of the test body and determine which parts of the cycle trailer can be touched (see Figure 1). For the dimensions of the test arms and test legs, see Table A.1.

No two parts of a test limb shall be bent more acutely than 90°. No part of the test leg shall pass behind a vertical plane through points B.

Use all available seating positions.



**Figure 1 — Determining the extent of the access zone**

## 5 Materials

### 5.1 Chemical properties for type C cycle trailers (Migration of certain elements)

All parts and components in the access zone (see 4.6) shall comply with the requirements in EN 71-3.

NOTE Attention is drawn to all legal requirements concerning Dangerous Substances e.g. Regulation (EC) No 1907/2006, etc.

This requirement does not apply to parts or components which due to their accessibility, function, mass, size or other characteristics, obviously exclude any hazard due to sucking, licking or swallowing, bearing in mind the foreseeable behaviour of children.

### 5.2 Flammability for type C cycle trailers

Fabrics shall not produce a surface flash.

Materials with a surface which produce surface flash on the approach of a flame shall not be used.

Surfaces showing no momentary area of flame in the area of the surface remote from the test flame are considered to meet this requirement.

## EN 15918:2011+A2:2017 (E)

The test of the flammability shall be according to EN 1888.

## 6 Construction

### 6.1 General

All tests shall be carried out at an ambient temperature of 23 °C.

### 6.2 Drawbar load and height

The height of the pitch pivot between connecting device and the trailer shall not exceed 400 mm above a road surface and the range of standard drawbar loads shall be defined by manufacturer. The drawbar load shall not be negative.

If the height of the connecting device is more than 400 mm above the road surface, it shall be verified that it is possible to decelerate the bicycle and trailer combination at not less than 0,35 g according to the calculation in Annex B.

Cycle trailers with a total weight not exceeding 30 kg are exempted from this requirement.

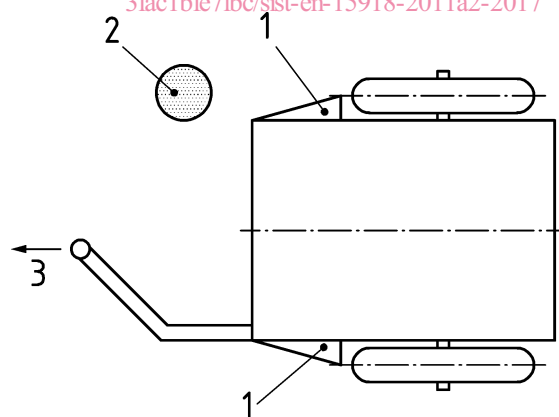
NOTE When the user connects the fully loaded trailer to any suitable cycle, it should not tend to lift the front wheel of the unloaded bicycle.

### 6.3 Deflection device

Cycle trailers shall be designed such that a vertical obstacle cannot be caught between a wheel and the body of the cycle trailer when the cycle trailer is drawn forwards past any such obstacle. An example is shown in Figure 2.

**A2**

SIST EN 15918:2011+A2:2017  
<https://standards.iteh.ai/catalog/standards/sist/8ea25d15-4893-4bd6-a3b0-3fac1bfe7fbc/sist-en-15918-2011a2-2017>



**A2**

#### Key

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

**Figure 2 — Example of the deflection devices**

**A2** The width of cycle trailer in front of the wheels shall not be less than the distance between the tyre centrelines and be shaped so that the cycle trailer is deflected sideways when drawn past a vertical obstacle with a minimum height of 750 mm and diameter of 90 mm (see Figure 2). **A2**