

Prüfbericht-Nr.: Test Report No.:	50305133 001	Auftrags-Nr.: Order No.:	244174703	Seite 1 von 24 Page 1 of 24
Kunden-Referenz-Nr.: Client Reference No.:	N/A	Auftragsdatum: Order date:	25.09.2019	
Auftraggeber: Client:	NINGBO ESSAY OUTDOOR AND LEISURE CO.,LTD NO., 433, SONGPU Rd, Binhai Economic Development Zone, CIXI CITY, CHINA			
Prüfgegenstand: Test item:	Bicycle kids trailer			
Bezeichnung / Typ-Nr.: Identification / Type No.:	5664-0086 BTC09 141 142 143			
Auftrags-Inhalt: Order content:	Test report service			
Prüfgrundlage: Test specification:	EN 15918:2011+A2:2017 Cycles - Cycle trailers - Safety requirements and test methods			
Wareneingangsdatum: Date of receipt:	28.09.2019			
Prüfmuster-Nr.: Test sample No.:	A001004476 001			
Prüfzeitraum: Testing period:	11.10.2019 - 02.12.2019			
Ort der Prüfung: Place of testing:	Kunshan			
Prüflaboratorium: Testing laboratory:	TÜV Rheinland (Shanghai) Co., Ltd. Kunshan Branch			
Prüfergebnis*: Test result*:	Pass			
geprüft von / tested by:		kontrolliert von / reviewed by:		
07.12.2019	Nan Jiang / PE	07.12.2019	Simon Huang / Reviewer	
Datum Date	Name / Stellung Name / Position	Unterschrift Signature	Datum Date	Name / Stellung Name / Position
			Unterschrift Signature	
Sonstiges / Other:				
Zustand des Prüfgegenstandes bei Anlieferung: Condition of the test item at delivery:		Prüfmuster vollständig und unbeschädigt Test item complete and undamaged		
* Legende:	1 = sehr gut P(ass) = entspricht o.g. Prüfgrundlage(n)	2 = gut F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	3 = befriedigend F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	4 = ausreichend N/A = nicht anwendbar
Legend:	1 = very good P(ass) = passed a.m. test specification(s)	2 = good F(ail) = failed a.m. test specification(s)	3 = satisfactory F(ail) = failed a.m. test specification(s)	4 = sufficient N/A = not applicable
5 = mangelhaft N/T = nicht getestet				
5 = poor N/T = not tested				
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i>				

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Liste der verwendeten Prüfmittel
List of used test equipment

[illegible]

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Produktbeschreibung
Product description

1	Produktdetails <i>Product details</i>	The product is a two wheel cycle trailer, for up to two children whom weights $\leq 9\text{kg}$. The cycle trailer is not convertible into a stroller.
2	Maße / Gewicht <i>Dimensions / Weight</i>	Weight: 14.2kg. Maximum L×W×H: (1710×860×1080)mm.
3	Bedienelemente <i>Operating elements</i>	N/A
4	Ausstattung / Zubehör <i>Equipment / Accessories</i>	N/A
5	Verwendete Materialien <i>Used materials</i>	See test report 0244174703a 002.
6	Sonstiges <i>Other</i>	N/A

1



2



3

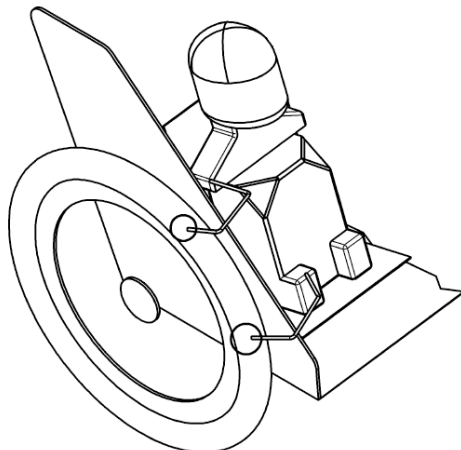


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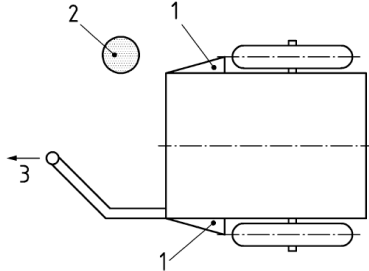


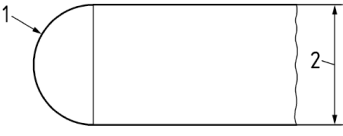
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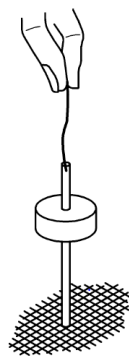
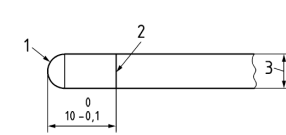
1	Scope This European standard specifies safety requirements and test methods for two track cycle trailers (i.e. with one or two wheels) and their connecting devices. These cycle trailers are intended for the conveyance of cargo loads or up to two passive child passengers (i.e. not pedalling), both of 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											
3	Terms and definitions											
4	General test requirements											
4.1	General test requirements The classification of cycle trailers is given in Table 1. Table 1 — Types of cycle trailers <table border="1" style="width: 100%; border-collapse: collapse; margin: 10px 0;"> <thead> <tr> <th rowspan="2" style="width: 30%;">Number of tracks</th> <th colspan="2" style="width: 70%;">For the transportation of:</th> </tr> <tr> <th style="width: 40%;">Children^a (C)</th> <th style="width: 30%;">Other loads (L)</th> </tr> </thead> <tbody> <tr> <td>1 (single track)</td> <td style="text-align: center;">—</td> <td style="text-align: center;">—</td> </tr> <tr> <td>2 (two tracks)</td> <td style="text-align: center;">C2^b</td> <td style="text-align: center;">L2</td> </tr> </tbody> </table> ^a In case the cycle trailer is convertible into e.g. a stroller, see EN 1888. ^b EXAMPLE Type C2 is a two track cycle trailer for the transportation of children and luggage. Classification: C2. P ☒ F ☐ N/A ☐ N/T ☐	Number of tracks	For the transportation of:		Children ^a (C)	Other loads (L)	1 (single track)	—	—	2 (two tracks)	C2 ^b	L2
Number of tracks	For the transportation of:											
	Children ^a (C)	Other loads (L)										
1 (single track)	—	—										
2 (two tracks)	C2 ^b	L2										
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											
4.4	Tolerances											
4.5	Test bodies											

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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	Checked OK.	P ☒ F ☐ N/A ☐ N/T ☐
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.	Details see test report 0244174703a 002 for EN 71-3:2019 Migration of 19 Elements.	P ☒ F ☐ N/A ☐ N/T ☐

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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. The test of the flammability shall be according to EN 1888.		P ☐ F ☐ N/A ☐ N/T ☒
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.	Height of the pitch pivot: 350mm. Total weight: 35kg. Checked OK.	P ☒ F ☐ N/A ☐ N/T ☐

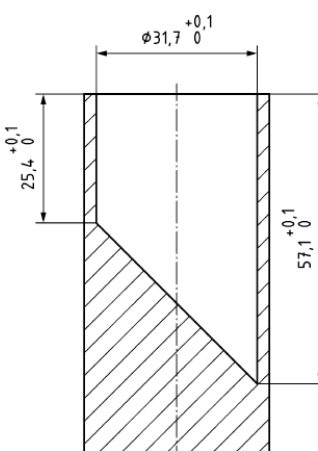
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6.3	Deflection device Cycle trailers shall be designed such that a vertical obstacle cannot be caught between a wheel and the body of the cycle trailer when the cycle trailer is drawn forwards past any such obstacle. An example is shown in Figure 2.  Key 1 deflection devices 2 vertical obstacle 3 moving direction Figure 2 — Example of the deflection devices 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).	Checked OK.	P ☒ F ☐ N/A ☐ N/T ☐
6.4	Hazardous edges and protrusions		
6.4.1	Requirements All accessible edges and protrusions of the cycle trailer under all conditions shall be rounded or chamfered and free from burrs. All surfaces of the cycle trailer shall be free from burrs and sharp edges.	Checked OK.	P ☒ F ☐ N/A ☐ N/T ☐
6.4.2	Test methods All hazardous edges and protrusions shall be tested by visual and tactile inspection.		

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6.5	Shear and compression points for type C cycle trailers The roadway and any parts of the trailer which move or rotate relative to it when the trailer is in motion, shall not be within the access zone. Nether shall there be within the access zone, any shear or compression points between moving parts that can close to less than 12 mm, except if this motion occurs only when the trailer or a part of it is being erected, folded or adjusted (e.g. adjustment of the backrest). The edges and ends of any parts within the access zone (see 4.6) shall be rounded in accordance with 6.4, unless the clearance between the edge or end and an opposing surface is always less than 5 mm. The test method described in 4.6 shall be used to determine what is within the access zone.	Checked OK.	P ☒ F ☐ N/A ☐ N/T ☐
6.6	Indirect contact with the wheels for type C cycle trailers		
6.6.1	Requirements It shall not be possible for an occupant of a trailer to make a side panel touch a wheel. Use the test method described in 6.6.2.	Tested with positive result.	P ☒ F ☐ N/A ☐ N/T ☐
6.6.2	Test methods Use the test probe shown in Figure 3 and apply a force of 80 N from the inside of the passenger area into the side panels. Apply the force for 1 min. The probe shall have a diameter of 60 mm and a hemispherical end of radius 30 mm.  Key 1 Hemispherical end 2 Diameter of 60 mm Figure 3 — Hemispherical probes, diameter of 60 mm		
6.7	Front protection for type C cycle trailers		
6.7.1	Requirements The type C cycle trailers shall be equipped with a barrier against small projectiles from the front. If the barrier has holes to permit ventilation, the size of the holes shall be smaller than 4 mm.	Barrier with holes; Checked OK. Tested with positive result.	P ☒ F ☐ N/A ☐ N/T ☐

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6.7.2	Test methods Check the holes by using a probe of diameter ($4^{+0.1}_0$) mm and a hemispherical end of 2 mm radius given in Figure 3 which shall have a weight of 100 g. Apply the force on 5 different places for 5 s each. An example of how to apply the probe is shown in Figure 4.  Figure 4 — Example for a mesh test		
6.8	Entrapment for type C cycle trailers		
6.8.1	Requirements There shall be no open ended tubes or apertures within the access zone of the vehicle (see 4.6) between 5 mm and 12 mm when measured in accordance with 6.8.2, unless the depth is less than 10 mm.	Checked OK.	P☒ F☐ N/A☐ N/T☐
6.8.2	Test methods Check whether the 5 mm probe shown in Figure 5 when applied with a force of up to 30 N, enters 10 mm or more into the opening in any possible orientation. If the 5 mm probe enters 10 mm or more then the 12 mm probe (see Figure 5) shall also enter 10 mm or more with an applied force of up to 5 N. Dimensions in millimetres  Key 1 Hemispherical end 2 Scribed line around circumference 3 Diameter 5 mm and 12 mm Figure 5 — Hemispherical probes, diameter of 5 mm and 12 mm		

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6.9	Small parts for type C cycle trailers In order to avoid ingestion or inhalation of small objects, detachable components within the access zone (see 4.6) shall not, without being compressed and whatever their orientation, fit entirely within the small parts cylinder shown in Figure 6. Dimensions in millimetres  Figure 6 — Small parts cylinder Non-detachable components within the access zone (see 4.6), i.e. those parts which are not intended to be removed, shall conform to one of the following: a) the components shall be so embedded that the child cannot grip them with its teeth or fingers; or b) the components shall be so fixed to the product that they cannot become detached when the torque and tensile tests are carried out in accordance with EN 71-1:2005+A9:2009, paragraphs 4, 5, 6 and 7 of 8.4.2.1, using the apparatus according to EN 71-1:2005+A9:2009, 8.4.1.1 and 8.4.1.2; or c) any components which become detached during the tests referred to at b) above shall not, without being compressed and whatever their orientation, fit entirely within the small parts cylinder having dimensions as given in Figure 6. Any parts which become detached during any other tests required by this standard shall not, without being compressed and whatever their orientation, fit entirely within the small parts cylinder.	Checked OK.	P ☒ F ☐ N/A ☐ N/T ☐
6.10	Folding mechanism		

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6.10.1	Requirements Locking devices are required to prevent a cycle trailer folding whilst a child is in the cycle trailer and also during the process of the child being put into and taken out of the cycle trailer. All locking devices for the folding mechanism shall be positioned so that it is not possible to operate more than one device in a single action. There shall be at least one locking mechanism which fulfils the following: a) the locking mechanism shall be released by at least two consecutive actions, the second being dependent on the first having been carried out and maintained; and b) the locking mechanism shall not be released or damaged in one single action during testing in accordance with 6.10.2. When tested in accordance with 6.10.2, the cycle trailer shall not fold. The locking devices shall not be released during the frame and chassis test (see 6.15).	Locked by bolts and nuts.	P ☒ F ☐ N/A ☐ N/T ☐	
6.10.2	Test method Place the vehicle on a horizontal flat surface. Apply a force of 150 N or a torque of 2,2 Nm to the locking mechanism. This force or torque shall be applied to the locking mechanism in the direction most likely to release the locking mechanism in one single action. The force or torque shall be applied for a period of 5 s. After this test check whether the locking mechanism has been released or damaged.			
6.11	Dimensions of the headroom for type C cycle trailers			
6.11.1	Requirements At the end position of the test according to 6.11.2, the head without helmet shall have a minimum distance to the ground of 50 mm. NOTE 1 It is recommended that a helmet according to EN 1078 should be worn. NOTE 2 It is recommended that the back rest is marked with a line showing maximum head height of a seated child.	Checked OK.	P ☒ F ☐ N/A ☐ N/T ☐	

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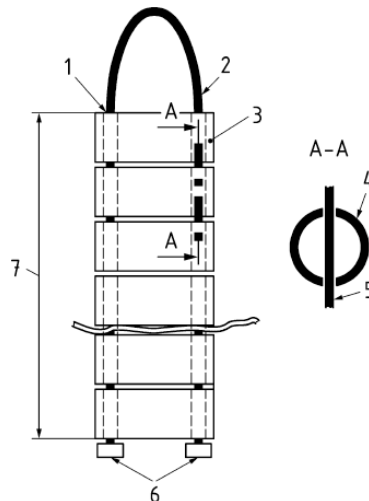
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6.11.2 Test method

For the determination of the required headroom, one or two test bodies, depending on the design of the cycle trailer, shall be strapped into the seat or seats with the hinged board placed between the test body and the seat back. Fully tighten the belts and then pull out the hinged board.

The hinged board is used to allow slackness while adjusting the straps of the restraint system around test mass (see Figure 7).

If there is a handlebar or rollover protection device, it shall be set up to manufactures recommended position for cycling.



Key

- 1 hole Ø 3 mm
- 2 steel cable Ø 1,5 mm
- 3 tube Ø 25 mm
- 4 tube Ø 25 mm
- 5 steel cable Ø 1,5 mm
- 6 cable ends cycle type
- 7 total length = 13 tubes
length of each tube: 60 mm

Figure 7 — Hinged board 

Use the largest applicable test body or bodies: D22, D18, and D9 according to Annex A.

Then slowly invert the cycle trailer (to 180°) and place it on the ground with the test body / bodies in situ and check whether the requirements of 6.11.1 are met.

6.12 Parking brake

6.12.1 Requirements

Type C2 cycle trailers shall be equipped with a parking brake. The trailer shall not move more than 50 mm after the brake has been applied. The parking brake shall be tested in accordance with 6.12.2. If a type L trailer is equipped with a parking brake the same requirements and test method shall be applied.

Method of use for parking brake see manufacturer's instructions and marking.

P ☒
F ☐
N/A ☐
N/T ☐

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6.12.2	Test method The cycle trailer shall be loaded up to its maximum weight and placed on a test surface which has an inclination of 10°. Suspend the connecting device at an appropriate height. Before the test the parking brake shall be operated 10 times. Then the brake shall be applied for test purposes, after which, it shall be verified whether the cycle trailer moves on the tilted plane. The test surface condition shall comply with EN 1888. Apply the test in forward and backward directions each for 1 min.			
6.13	Stability			
6.13.1	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 55%; padding: 5px; vertical-align: top;"> Requirements During the stability tests according to 6.13.2, the upper cycle trailer wheel shall not lift off the laterally inclined test surface and the cycle trailer shall not topple over. Test bodies are those according to Annex A which correspond to the age limit specified by the manufacturer. </td> <td style="width: 30%; padding: 5px; vertical-align: top;"> Checked OK. </td> <td style="width: 15%; padding: 5px; vertical-align: top;"> P ☒ F ☐ N/A ☐ N/T ☐ </td> </tr> </table>	Requirements During the stability tests according to 6.13.2, the upper cycle trailer wheel shall not lift off the laterally inclined test surface and the cycle trailer shall not topple over. Test bodies are those according to Annex A which correspond to the age limit specified by the manufacturer.	Checked OK.	P ☒ F ☐ N/A ☐ N/T ☐
Requirements During the stability tests according to 6.13.2, the upper cycle trailer wheel shall not lift off the laterally inclined test surface and the cycle trailer shall not topple over. Test bodies are those according to Annex A which correspond to the age limit specified by the manufacturer.	Checked OK.	P ☒ F ☐ N/A ☐ N/T ☐		
6.13.2	Stability test for type C2 cycle trailers The cycle trailer shall be set up and tyres shall be inflated to the pressure specified by the manufacturer. If the cycle trailer manufacturer does not give a tyre inflation pressure, they shall be inflated to the maximum pressure given on the tyres. The cycle trailer shall be loaded with one largest applicable test body. In a two seated cycle trailer the test body shall be placed on the side that will be lowest during the subsequent tipping operation. The cycle trailer, prepared and coupled to its towing connecting device at the worst-case height permitted by the manufacturer, shall be placed on a plane surface which is initially secured in a horizontal alignment, but has the capability of being gradually tilted about an axis parallel to the cycle trailer's driving direction, at an angle of 25°.			
	The plane surface shall be slowly tilted to an angle of 25° to one side, at which point it shall be ascertained that the upper wheel has not lifted off the surface. Tests shall be performed in both directions, either by tilting both ways or by repositioning the cycle trailer and its towing connecting device to point in the opposite direction. In the case the of a two seated cycle trailer the test body shall be repositioned in the opposite seat.			

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6.14	Lighting systems, reflectors and other conspicuity aids The cycle trailer shall be fitted with front, rear and side reflectors. The reflectors shall be according to the national lighting regulations in the country, where the cycle trailer is sold. In countries with no national regulations the front reflector(s) shall be white, the rear reflector(s) shall be red and the side reflectors shall be white or yellow. The manufacturer's instructions shall include advice to the user to take note of national lighting regulations for the country in which the cycle trailer is to be used and shall describe how lights can be fitted. See Clause 8 f) and g). The cycle trailer shall be equipped with a flag that is triangular in shape and made of high-visibility orange material. The flag shall be a minimum of 290 cm² in area, with the bottom of the flag no lower than 1,4 m above the ground and the top of the flag no higher than 2,0 m above the ground, when the cycle trailer is in a horizontal position. The manufacturer may print the surface of the flag with a logo or writing. The amount of printed area shall not reduce the amount of highly visible surface area of the flag to less than 260 cm² on either side.	Front reflector: white; Rear reflector: red; Side reflector: yellow; The reflectors were not checked according to the national regulations. Checked OK. Checked OK. Bottom height: 1.540m; Top height: 1.780m; Area: 319cm². No logo or writing on flag.	P ☒ F ☐ N/A ☐ N/T ☐
6.15	Frame and chassis		
6.15.1	Requirements When loaded in accordance with 6.15.2.1, the standard drawbar load shall not be less than 30 N and not be greater than 80 N. After the test in accordance with 6.15.2, no rigid structural part or fixing point of flexible part of the cycle trailer shall present any sign of fracture, visible crack, permanent deformation or any other defect. The access zone (see 4.6) of the cycle trailer shall not show formation of openings, sharp edges or other changes capable of causing injuries.	Tested with positive result.	P ☒ F ☐ N/A ☐ N/T ☐
6.15.2	Test method		

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6.15.2. 1	Preparation The cycle trailer shall be set up and tyres shall be inflated to the pressure specified by the manufacturer, but not to a lower pressure than the minimum pressure, given on the tyres. If the cycle trailer manufacturer does not give a tyre inflation pressure, they shall be inflated to the maximum pressure given on the tyres. If there is a suspension system that is adjustable, it has to be adjusted to the maximum load. The cycle trailer shall be loaded according to its intended use with a load in the seat or seats equal to the weight of the largest applicable test body or bodies. The maximum weight or the nominal load shall not be exceeded by the mass placed on the seats. The difference between the test mass in the seats and the nominal load shall be inserted as additional load in the luggage compartment. If the cycle trailer has no luggage compartment, then an additional load shall be placed in the seat area. After the cycle trailer has thus been loaded the standard drawbar load shall be measured. All test masses shall be secured in the trailer. If the test masses or any adjustable straps of the seat attachment become loose during the test, the test may be paused to retighten them, but not more frequently than every 2 000 cycles.		
6.15.2. 2	Overloading by 25 % Additional loads shall then be placed in the cycle trailer to a total of 1,25 times the nominal load. These additional loads shall be uniformly distributed in the cycle trailer so that the drawbar load increases to between 1,2 and 1,3 times the standard drawbar load.		

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6.15.2. Test equipment
3

The test equipment shall resemble the situation where the cycle trailer is driven in a horizontal direction over obstacles, but with the connecting device held stationary in front of a moving roadway, that shall comprise a cylinder fitted with obstacles according to Figure 8.

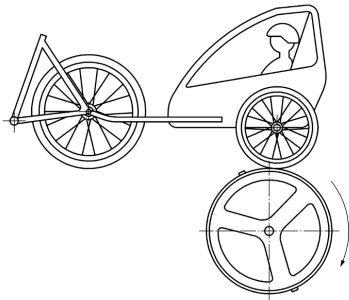


Figure 8 — Dynamic test

The cycle trailer shall be positioned such that the axes of its wheels and the driving cylinder are parallel, with the axle(s) of the cycle trailer positioned in horizontal direction between 25 mm and 50 mm behind the highest point of the cylinder. The equipment shall be wide enough to allow for lateral movement of the cycle trailer during the test. The height of the connecting point has to correspond with the manufacturer's instructions.

The surface of the cylinder shall be driven at a speed of 12,5 km/h and shall be equipped with obstacles positioned centrally relative to each wheel track, so that each wheel of a two-wheeled cycle trailer makes alternate contact with an obstacle at equal intervals. Each obstacle shall be 38 mm high. The length of each obstacle in the direction of motion shall be from 50 mm to 100 mm with a 45° ramped leading face and perpendicular trailing face, and shall be at least 300 mm wide (see Figure 9). If there are two wheel tracks, the two rows of obstacles shall not overlap and shall be separated by a distance of at least 350 mm.

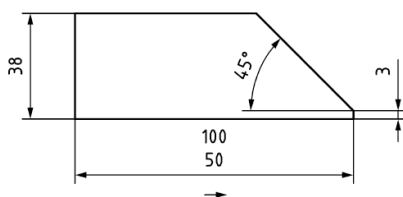


Figure 9 — Obstacle

The duration of one test cycle is the time taken for one wheel to pass from one obstacle to the next.

The number of obstacles in relation to the diameter of the cylinder shall be such that between 50 test cycles and 100 test cycles are completed per minute, at the driving speed of 12,5 km/h.

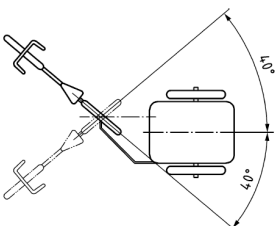
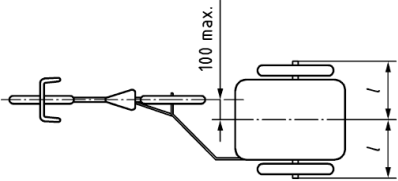
The test is invalid if the cycle trailer is in resonance during the test. If that happens the speed shall be varied by $\pm 5\%$.

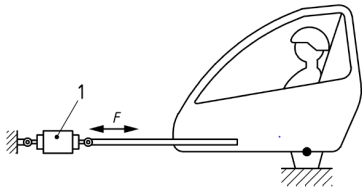
NOTE The criteria can be met, with one obstacle per wheel, using a cylinder between 663 mm and 1 326 mm in diameter. Larger cylinders up to 2 653 mm in diameter will require two obstacles per wheel, and so on.

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6.15.2.4	Procedure The cycle trailer shall be fixed relative to the test equipment, by means of its connecting device. At the conclusion of 10 000 test cycles, a visual inspection shall be made with the cycle trailer remaining upon the test equipment and any damage noted. Then the cycle trailer shall be removed from the test equipment and the connecting device, the drawbar, the connection of the drawbar to the cycle trailer, the wheel and wheel suspension as well as frame and superstructure, shall be examined.														
6.15.2.5	Data All data for testing the drawbar connection device are given in Table 3. Table 3 — Data for testing frame and chassis <table><tr><th></th><th>Data for testing frame and chassis</th></tr><tr><td>Loading</td><td>125 % of the nominal load</td></tr><tr><td>Hold point of connecting device</td><td>Permanently mounted bicycle frame (or rear construction)</td></tr><tr><td>Height of obstacle</td><td>38 mm</td></tr><tr><td>Speed</td><td>12,5 km/h</td></tr><tr><td>Cycle frequency</td><td>50 min⁻¹ to 100 min⁻¹</td></tr></table>				Data for testing frame and chassis	Loading	125 % of the nominal load	Hold point of connecting device	Permanently mounted bicycle frame (or rear construction)	Height of obstacle	38 mm	Speed	12,5 km/h	Cycle frequency	50 min ⁻¹ to 100 min ⁻¹
	Data for testing frame and chassis														
Loading	125 % of the nominal load														
Hold point of connecting device	Permanently mounted bicycle frame (or rear construction)														
Height of obstacle	38 mm														
Speed	12,5 km/h														
Cycle frequency	50 min ⁻¹ to 100 min ⁻¹														
6.16	Drawbar and connecting device														

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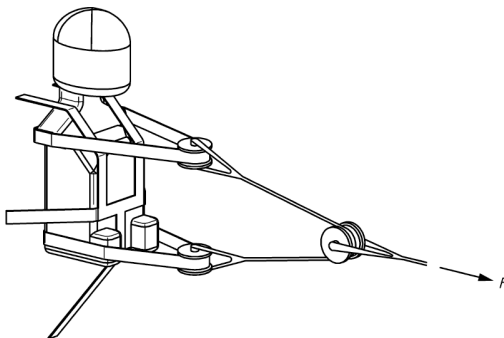
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6.16.1	Requirements During the test according to 6.16.2.3, no fractures, visible cracks, permanent deformation or other defects shall occur in the connecting device, the drawbar or the connection of the drawbar to the cycle trailer. The cycle trailer shall be set up and tyres shall be inflated to the pressure specified by the manufacturer, but not to a lower pressure than the minimum pressure, given on the tyres. If the cycle trailer manufacturer does not give a tyre inflation pressure, they shall be inflated to the maximum pressure given on the tyres. In addition the following requirements shall be met. a) The connecting device of the cycle trailer shall allow the cycle to be turned at least 40° in either direction relative to the centre line of the cycle trailer (see Figure 10). b) The centre lines of the cycle and cycle trailer shall, when parallel, not be more than 100 mm apart (see Figure 11). c) The connecting device of two track cycle trailers shall be able to twist at least to 90° in both directions, without either cycle trailer wheel lifting from the ground, when the cycle trailer is unloaded.  Figure 10 — Turning angle of cycle relative to the cycle trailer  Figure 11 — Centre lines of the cycle and cycle trailer	Tested with positive result. Checked OK. 65mm. Checked OK.	P ☒ F ☐ N/A ☐ N/T ☐

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6.16.2	Test method The cycle trailer without wheels shall be fixed in its usual riding position, with any wheel suspension devices locked, on a plane horizontal surface (see Figure 12). The connecting device of the drawbar shall be attached to an actuator in such a way that only nearly horizontal movement is applied to the trailer. Figure 12 depicts a possible arrangement of test equipment for this test. Small vertical oscillations of the connecting device are permitted, of amplitude not exceeding 10 % of the horizontal motion. The cycle trailer shall be coupled to the actuator and 100 000 test cycles shall be performed with a force (in N) of $\pm 4,5 \times$ total weight as given by the manufacturer and a maximum frequency of 10 Hz.  Key 1 Cylinder Figure 12 — Arrangement of test equipment		
6.17	Secondary safety device		
6.17.1	Requirements Type C2 and type L2 cycle trailers shall be equipped with a secondary safety device between the drawbar and the cycle which avoids the complete disconnection of the cycle and the cycle trailer in the event of the failure of the connecting device. The device shall withstand the test described in 6.17.2.	Tested with positive result.	P F N/A N/T ☒ ☐ ☐ ☐
6.17.2	Test method After the test described in 6.16.2 uncouple the cycle trailer, so that the only connection between the drawbar and the cycle is the secondary safety device. Pull the cycle trailer backwards with an applied force of 1 000 N for 15 s.		
6.18	Strength of the restraint system		

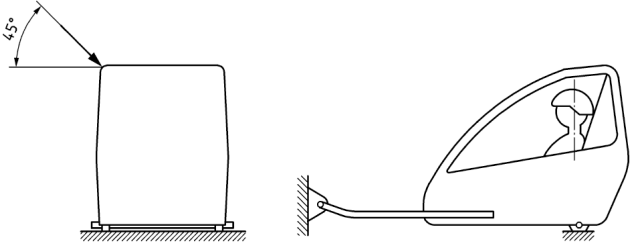
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6.18.1	Requirements The cycle trailer shall be fitted with seats appropriate for children and with at least a three point belt with shoulder straps and crotch belt. The belts shall be fixed at the chassis of the cycle trailer and have a minimum width of 25 mm. Belt buckle locks shall be so designed that they cannot easily be opened by children. The enclosure of any belt or restraint device shall be of a childproof safety-quick-release type, requiring either two independent actions, the first of which must be maintained while the second is carried out or a force of at least 40 N to open the enclosure, with a maximum of 60 N. Belts shall be subjected to the test according to 6.18.2 and shall show no signs of damage after the test.	Test body: D9; Tested with positive result.	P☒ F☐ N/A☐ N/T☐								
6.18.2	Test method Fix the cycle trailer as described in 6.19.2. The test according to Figure 13 shall be carried out with the forces parallel to the ground in accordance with Table 4. The force shall be applied at the centre of gravity. Table 4 — Forces for the measuring the strength of the belts <table><tr><th>Test body</th><th>Force N</th></tr><tr><td>D9</td><td>410</td></tr><tr><td>D18</td><td>820</td></tr><tr><td>D22</td><td>1 000</td></tr></table> The largest applicable test body shall be used. If the cycle trailer is designed to seat either one or two children it shall also be tested with two test bodies.  Key F force Figure 13 — Testing of the belt			Test body	Force N	D9	410	D18	820	D22	1 000
Test body	Force N										
D9	410										
D18	820										
D22	1 000										
6.19	Rigidity of the passenger cab for type C cycle trailers only										

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6.19.1	Requirements When testing the rigidity of the passenger cab, the passenger cab shall not present a deformation of any part of the inner structure of more than 80 mm in any direction at the loaded point during the test. After the test no structural changes shall be visible which may cause injuries.	Tested with positive result.	P ☒ F ☐ N/A ☐ N/T ☐
6.19.2	Test method The cycle trailer without wheels is fixed in its usual driving position on a plane horizontal surface, such that it cannot move during the test. The fixing points shall only be in the lower area of the chassis, because otherwise the stabilisation of the superstructure is too strong. A force of 1,5 times the nominal load permitted by the manufacturer shall be applied for at least 15 s to a plane pad at $45^\circ \pm 5^\circ$ as shown in Figure 14 and as described below. The loading pad shall have a diameter of 200 mm. The line of action of the force shall run at an angle of $45^\circ \pm 5^\circ$ to the horizontal plane and perpendicular to the cycle trailer centreline, from above and outside the cycle trailer so as to impinge upon the upper edge of its superstructure frame. If this point of application due to the design is not feasible, the next possible loading point on the frame with the most of the effort shall be used and the position has to be recorded in the test report.  Figure 14 — Side impact		
7	Test report		

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8	Manufacturer's instructions Each cycle trailer shall be provided with a manufacturer's instruction at least with the following information given in the language of the country where the cycle trailer is sold: a) instruction to check that the cycle is suitable for towing the cycle trailer with reference to the cycle manufacturer's instructions; b) indication of the intended use of the cycle trailer together with a warning relating to the dangers in case of improper use; c) indication of the use of the cycle trailer in connection with a suitable cycle; d) instruction for correct mounting of the cycle trailer; e) instruction for appropriate operation of the connecting device; f) an advisory note to draw the attention of the user to possible national legal requirements when the cycle trailer is to be used on public roads (e.g. lighting and reflectors); g) instruction how to fit lighting equipment to the trailer including appropriate designs of lamps and locations on the trailer; h) indication of regular checking of all important components such as: drawbar, connecting device, frame, safety belts, lighting equipment, tyres and wheels etc. for safe condition; regular verification whether bolted assemblies are well tightened; i) indication of appropriate restraint of the child/children with safety belts; j) indication of correct loading and of the total weight as well as the nominal load; k) information on driving behaviour of the cycle/cycle trailer set, especially when driving downhill or around corners; l) caution on the negative influence of the trailer on the braking distance of the cycle when the trailer is attached;	Checked OK.	P ☒ F ☐ N/A ☐ N/T ☐

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	m) indication that the cover of a cycle trailer for children shall always be closed during the drive; n) information on how many children up to which weight and to which height are allowed to be transported; o) specifications for correct mounting and use of accessories; p) advice that children in seats should be fitted with a suitable safety helmet; NOTE In some countries, helmets are a legal requirement. q) information about the minimum and maximum drawbar load and how to check it. r) information that cycle trailers pulled by an EPAC can be restricted by law.		
9	Marking		
9.1	Marking requirement The cycle trailer shall be clearly and indelibly marked with a) the number of this European standard; b) the model name and/or model number; c) the manufacturer's identity, or the identity of the manufacturer's representative; d) the maximum total weight and the nominal load; e) the minimum and the maximum drawbar load; f) the minimum age and maximum height of the passengers. g) caution on the negative influence of the trailer on the braking distance of the cycle when the trailer is attached. The durability test method is given in 9.2. NOTE Certain countries have legal provisions for the marking of cycle trailers.	Checked OK.	P ☒ F ☐ N/A ☐ N/T ☐
9.2	Durability The marking shall be rubbed by hand for 15 s with a piece of cloth soaked with water and again for another 15 s with a piece of cloth soaked with petroleum spirit.	Tested with positive result.	P ☒ F ☐ N/A ☐ N/T ☐

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Annex A	(normative) Test bodies		
Annex B	(normative) Calculation of maximum possible deceleration		
Annex C	(normative) Test order		

***** End of test report *****