Prüfbericht-Nr.: *Test report no.*:	**NN24L9DO 001**	**Auftrags-Nr.:** *Order no.*:	326013958	Seite 1 von 56 *Page 1 of 56*
Kunden-Referenz-Nr.: *Client reference no.*:	2490883	**Auftragsdatum:** *Order date:*	2024-04-11	
Auftraggeber: *Client*:	**Shenzhen Kukirin Technology Co., Ltd.** Room 4F4913, Shenzhou Computer Building, Marie Curie Avenue, Vanke City Community, Bantian Street, Longgang District, Shenzhen City, 518000 Guangdong, P.R. China			
Prüfgegenstand: *Test item*:	Electric Scooter			
Bezeichnung / Typ-Nr.: *Identification / Type no.*:	G2 Pro			
Auftrags-Inhalt: *Order content*:	Test report service			
Prüfgrundlage: *Test specification*:	EN 17128:2020 / BS EN 17128:2020 Light motorized vehicles for the transportation of persons and goods and related facilities and not subject to type- approval for on-road use - Personal light electric vehicles (PLEV) - Safety requirements and test methods			

Wareneingangsdatum: *Date of sample receipt*:	2024-05-08
Prüfmuster-Nr.: *Test sample no:*	A003784996-001
Prüfzeitraum: *Testing period*:	2024-05-08 - 2024-07-29
Ort der Prüfung: *Place of testing*:	Kunshan; Shanghai
Prüflaboratorium: *Testing laboratory:*	TÜV Rheinland (Shanghai) Co., Ltd. Kunshan Branch
Prüfergebnis*: *Test result**:	Pass

geprüft von:
tested by:

Datum:
Date: 2024-08-14

Stellung / Position: John He / PE

genehmigt von:
authorized by:

Ausstellungsdatum:
Issue date: 2024-08-14

Stellung / Position: Nan Jiang / Reviewer

Sonstiges / *Other*:
1. The respective national legal requirements have to be fulfilled additionally before used on public roads.
2. UK difference was considered, and no additional tests considered necessary.

Zustand des Prüfgegenstandes bei Anlieferung: Prüfmuster vollständig und unbeschädigt
Condition of the test item at delivery: *Test item complete and undamaged*

* Legende:	P(ass) = entspricht o.g. Prüfgrundlage(n)	F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
* *Legend:*	*P(ass) = passed a.m. test specification(s)*	*F(ail) = failed a.m. test specification(s)*	*N/A = not applicable*	*N/T = not tested*

Prüfbericht-Nr.: NN24L9DO 001
Test report no.:

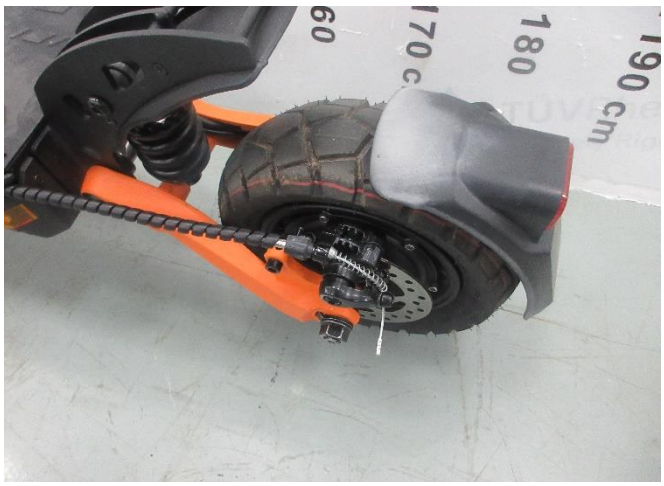
Anmerkungen
Remarks

1	Alle eingesetzten Prüfmittel waren zum angegebenen Prüfzeitraum gemäß eines festgelegten Kalibrierungsprogramms unseres Prüfhauses kalibriert. Sie entsprechen den in den Prüfprogrammen hinterlegten Anforderungen. Die Rückverfolgbarkeit der eingesetzten Prüfmittel ist durch die Einhaltung der Regelungen unseres Managementsystems gegeben. Detaillierte Informationen bezüglich Prüfkonditionen, Prüfequipment und Messunsicherheiten sind im Prüflabor vorhanden und können auf Wunsch bereitgestellt werden. *The equipment used during the specified testing period was calibrated according to our test laboratory calibration program. The equipment fulfils the requirements included in the relevant standards. The traceability of the test equipment used is ensured by compliance with the regulations of our management system. Detailed information regarding test conditions, equipment and measurement uncertainty is available in the test laboratory and could be provided on request.*
2	Wie vertraglich vereinbart, wurde dieses Dokument nur digital unterzeichnet. Der TÜV Rheinland hat nicht überprüft, welche rechtlichen oder sonstigen diesbezüglichen Anforderungen für dieses Dokument gelten. Diese Überprüfung liegt in der Verantwortung des Benutzers dieses Dokuments. Auf Verlangen des Kunden kann der TÜV Rheinland die Gültigkeit der digitalen Signatur durch ein gesondertes Dokument bestätigen. Diese Anfrage ist an unseren Vertrieb zu richten. Eine Umweltgebühr für einen solchen zusätzlichen Service wird erhoben. *As contractually agreed, this document has been signed digitally only. TUV Rheinland has not verified and unable to verify which legal or other pertaining requirements are applicable for this document. Such verification is within the responsibility of the user of this document. Upon request by its client, TUV Rheinland can confirm the validity of the digital signature by a separate document. Such request shall be addressed to our Sales department. An environmental fee for such additional service will be charged.*
3	Prüfklausel mit der Note * wurden an qualifizierte Unterauftragnehmer vergeben und sind unter der jeweiligen Prüfklausel des Berichts beschrieben. Abweichungen von Prüfspezifikation(en) oder Kundenanforderungen sind in der jeweiligen Prüfklausel im Bericht aufgeführt. *Test clauses with remark of * are subcontracted to qualified subcontractors and descripted under the respective test clause in the report.* *Deviations of testing specification(s) or customer requirements are listed in specific test clause in the report.*
4	Die Entscheidungsregel für Konformitätserklärungen in diesem Prüfbericht basiert auf der "Null-Grenzwert-Regel" und der "Einfachen Akzeptanz" gemäß ILAC G8:2019 und IEC Guide 115:2021, es sei denn, in der auf Seite 1 dieses Berichts genannten angewandten Norm ist etwas anderes festgelegt oder vom Kunden gewünscht. Dies bedeutet, dass die Messunsicherheit nicht berücksichtigt wird und daher auch nicht im Prüfbericht angegeben wird. *The decision rule for statements of conformity in this test report is based on the "Zero Guard Band Rule" and "Simple Acceptance" in accordance with ILAC G8:2019 and IEC Guide 115:2021, unless otherwise specified in the applied standard mentioned on Page 1 of this report or requested by the customer. This means that measurement uncertainty is not taken in account and hence also not declared in the test report.*

Produktbeschreibung
Product description

1	**Produktdetails** *Product details*	Electric scooters, Class 2 vehicle according to EN 17128:2020
2	**Maße / Gewicht** *Dimensions / Weight*	Max. L*W*H= about 117.0cm×59.0cm×131.0cm; Net weight: 22.15kg.
3	**Bedienelemente** *Operating elements*	An acceleration throttle and two brake levers on handlebar.
4	**Ausstattung / Zubehör** *Equipment / Accessories*	A battery charger
5	**Verwendete Materialien** *Used materials*	Not provided
6	**Sonstiges** *Other*	Test sample(s), as well sample information, description, product details and intended usage was provided by customer. No balance system; No seating position; Two aligned wheels in a single track; Max. designed speed: 25km/h; Battery: rated 48VDC, 15.6Ah, 748.8Wh; Motor: rated power 500W as declared; Max. permissible payload: 120kg (user); Brake system: front / rear disc brake activated by right / left side brake lever, rear electric brake starts when brake lever operated; Tyre: Marked 9.0 X 3.0 inches, 50 PSI; Suspension system: spring on front and rear wheel support system; Parking system: a kickstand equipped; Light system and reflectors: see clause 16; Warning device: an electric horn on handlebar.
7	**Prüfmusterbereitstellung**: *Test sample obtaining*	☒ Sending by customer ☐ Sampling by TÜV Rheinland Group ☐ others:

Produktbeschreibung
Product description

1	2
	
3	4
	
5	6
	

Absatz *Clause*	**Anforderungen - Prüfungen /** *Requirements - Tests*	**Messergebnisse – Bemerkungen/** *Measuring results - Remarks*	**Ergebnis** *Result*
1	**Scope** Details see standard EN 17128:2020.	The tested samples are E-scooters. The technical parameter of the samples complied with the scope. See details in the following clauses.	P ☒ F ☐ N/A ☐ N/T ☐
2	**Normative references** Details see standard EN 17128:2020.		
3	**Terms and definitions** Details see standard EN 17128:2020.		
4	**Classes of vehicles** Various personal light electric vehicles (vehicles) exist covering as many different uses offered to different users based on their age, mass, size and driving experience. The main classes of vehicle are defined below combined with the main design choices that characterize them. **Table 1 — Classes of vehicle (Design elements)** Classes | With self-balanced system | Maximum design speed (km/h) | Seating position Class 1 | No | Up to 6 km/h | No Class 2 | No | Up to 25 km/h | No Class 3 | Yes | Up to 6 km/h | with or without Class 4 | Yes | Up to 25 km/h | with or without NOTE Examples of vehicles are given in Annex E.	Class 2 vehicle, see *product description* on page 3.	P ☒ F ☐ N/A ☐ N/T ☐
5	**General safety requirements and protective measures** Vehicle shall comply with the specific requirements of all clauses of this standard. *NOTE Annex A shows the list of hazards considered this document.* For vehicles which are not sold fully assembled, there shall be a maximum of three separate parts requiring assembly (e.g. steering device, wheels and batteries), the necessary tools and detailed assembly instructions shall be provided which specify by a text and diagrams the operations to be carried out as well as the clamping force.	See following pages. Informative. Sold in a folding state in the package, with the handlebar disassembled, necessory tool and instructions for assembly are provided.	P ☒ F ☐ N/A ☐ N/T ☐

Absatz *Clause*	Anforderungen - Prüfungen / *Requirements - Tests*	Messergebnisse – Bemerkungen/ *Measuring results - Remarks*	Ergebnis *Result*
6	**Electrical components**		
6.1	**General mechanical strength** The ESA including the battery shall have adequate mechanical strength and be constructed to withstand such rough handling that may be expected in intended use and foreseeable misuse. Compliance is checked by: — Applying impacts to the enclosures of ESA mounted on the vehicles by means of the spring hammer as specified in EN 60068-2-75:2014. The ESA is rigidly supported and three impacts are applied to every point of the enclosure that is likely to be weak with an impact energy of (0,7 ± 0,05) J. — Detachable ESA are submitted to free fall on a rigid surface as specified in EN 22248:1992 at a height of 0,90 m in three different positions. The positions shall be one surface, one edge and one corner of the enclosure that are likely to be the most onerous position. After the test the ESA shall show no damage that could lead to emission of dangerous substances (gas or liquid) ignition, fire or overheating. A temperature rise test shall be performed, in accordance with 6.3.2.2, During the test, the temperature rises are monitored continuously and shall not exceed the values shown in EN 60335-1:2012, Table 3 and after the test the ESA shall show no damage or malfunction that could impair the safe use of the vehicles. Batteries and other electric conductive power supply systems shall be assessed and tested in accordance with EN 62133-1:2017 and EN 62133-2:2017 or other relevant standards. *NOTE Transportation regulations can give additional requirements for general design of the battery and battery pack.*	The battery is internally mounted in deck. The mechanical tests are performed on the display, front and rear lights, motor etc where applicable. Not detachable ESA. Tested with positive results. Parameter of the battery pack: Model: AFT48V/15.6Ah; Ratings: 48VDC, 15.6Ah, 748.8Wh. See IEC 62133-2: 2017 test report: TCT240307B018. Issued by Shenzhen TCT Testing Technology Co., Ltd., dated on 2024-03-19.	P ☒ F ☐ N/A ☐ N/T ☐

Absatz *Clause*	Anforderungen - Prüfungen / *Requirements - Tests*	Messergebnisse – Bemerkungen/ *Measuring results - Remarks*	Ergebnis *Result*
6.2	**Electrical power on/off control** An electrical power on/off control shall be fitted to on and power-off the driving power. It shall be apparent, easy to reach and unmistakable. This electrical power on/off control shall be activated voluntary by the user to enable the driving power. The electrical power on/off system shall be designed such that, in the event of a malfunction, the vehicle shall still be able to stop or be able to be stopped with a smooth deceleration (as defined in 15.4.2.5 Electric failure braking compensation). The electrical power on/off system shall be located in a position easily reachable by the user with appropriate symbol given in Annex F. On self-balancing vehicles or vehicles with electric brake, the power -off control shall not disconnect the power while driving: the power -off control shall only work without user on the vehicle. *NOTE The electrical power on/off system is a mechanical solution (key-lock, button, etc.) or an electrical solution (user detection, turn off timer, etc.).*	Power on/off control is voluntary. The control will cut off the power to the motor when there is malfunction of the system occurred. Easily reachable. Not such vehicles, with mechanical brakes. A toggle switch.	P ☒ F ☐ N/A ☐ N/T ☐
6.3	**Electrical cables and connections**		
6.3.1	**General** All electrical connectors shall be selected to prevent the corrosion.		P ☒ F ☐ N/A ☐ N/T ☐
6.3.2	**Cable and plugs**		
6.3.2.1	**Requirements** After the test according to 6.3.2.2, there shall be no deterioration of the insulation on either assembly. The cable cross sections shall be selected in accordance with EN 61558-1:2005, EN 61558-2-16:2009, EN 60335-1:2012, EN 60335-2-29:2004, Table 11 or a temperature rise test shall be performed, in accordance with 6.3.2.2 the temperature of the cables and plugs in use shall be at least 5 °C lower than the maximum specified by the manufacturer. *NOTE 1 Cable used only for communication line is excluded.* *NOTE 2 the rated current (accordance with EN 61558-1:2005, EN 61558-2-16:2009, EN 60335-1:2012, EN 60335-2-29:2004 Table 11) measured when the vehicle is supplied at rated voltage and operated under normal operation.*	The temperature rise test is performed, no deterioration of the insulation on either assembly (e.g. power cables/plugs).	P ☒ F ☐ N/A ☐ N/T ☐

Absatz *Clause*	**Anforderungen - Prüfungen /** *Requirements - Tests*	**Messergebnisse – Bemerkungen/** *Measuring results - Remarks*	**Ergebnis** *Result*
6.3.2.2	**Test method** At an ambient room temperature (20 ± 5) °C, discharge the fully charged vehicle battery to the discharging limit for the vehicle, and the vehicle is supplied at rated voltage and operated under normal operation: — measure the cable and plug temperature rises.	Test accordingly.	P ☒ F ☐ N/A ☐ N/T ☐
6.3.3	Wiring shall be checked according to the following sequence at an ambient room temperature (20 ± 5) °C. a) Wireway shall be smooth and free from sharp edges. b) Wires shall be protected so that they do not come into contact with burrs, cooling fins or similar sharp edges that may cause damage to their insulation. c) Holes in metal through which insulated wires pass shall have smooth well-rounded surfaces or be provided with bushings. d) Wires shall be effectively prevented from coming into contact with moving parts. Compliance with a), b), c) and d) shall be checked by physical inspection. e) Separate parts of the vehicles that can move in normal use or during user maintenance relative to each other, shall not cause undue stress to electrical connections and internal conductors, including those providing earthing continuity. f) If an open coil spring is used to protect wire, it shall be correctly installed and insulated. Flexible metallic tubes shall not cause damage to the insulation of the conductors contained within them. Compliance with e) f) shall be checked by inspection and by the following test method: 1) If flexing occurs in normal use, the product is placed in its normal operational position and is supplied at rated voltage under normal operation. 2) The movable part is moved from an extreme position to the opposite extreme position, so that the conductor undergoes maximum flexion. 3) For conductors that are flexed in normal use, flex movable part for 10 000 cycles at a test frequency of 0,5 Hz. 4) For conductors that are flexed during user maintenance, flex the movable part for 100 cycles at the same frequency.	Tested accordingly. a) checked ok; b) checked ok; c) provided with rubber protectors; d) checked ok, no such contact hazards; e) tested ok; f) no such parts fitted.	P ☒ F ☐ N/A ☐ N/T ☐

Absatz *Clause*	**Anforderungen - Prüfungen /** *Requirements - Tests*	**Messergebnisse – Bemerkungen/** *Measuring results - Remarks*	**Ergebnis** *Result*
6.3.4	**Wiring harness** When a wiring harness is installed, it shall be positioned to avoid any damage related to contact with moving parts or sharp edges. All connections shall withstand a tensile force of 10 N in any direction.	The wiring motor is tested.	P ☒ F ☐ N/A ☐ N/T ☐
6.3.5	**Power cables and conduits** Conduit entries, cable entries and knockouts shall be constructed or located so that the introduction of the conduit or cable does not reduce the protection measures adopted by the manufacturer. Compliance is checked by inspection. *NOTE Guidance for power cables size selection is given in HD 60364-5-52:2011, 5.22.1.2, 523.1523.3 and Table A 52–10.* The insulation of internal wiring shall withstand the electrical stress likely to occur in intended use. The wiring and its connections shall withstand an electrical strength test with the following characteristics. The test voltage expressed in volts shall be equal to (500+2*Ur) where Ur is the rated voltage. The test voltage is applied for 2 min between live parts and other metal parts only.	Checked Ok. The conduit and cable entries has protection of bushing and protective tubes. Electrical strength tested to the voltage of 596V with positive result.	P ☒ F ☐ N/A ☐ N/T ☐
6.3.6	**External and internal electrical connections** Electrical connection shall comply with HD 60364-5-52:2011, 526.1 and tested in accordance with HD 60364-5-52:2011, 526.2.	The connections between conductors and between conductors and other equipment were provided with durable electrical continuity and adequate mechanical strength and protection. The selection of the means of connection complied with IEC 60364-5-52 clause 526.2.	P ☒ F ☐ N/A ☐ N/T ☐
6.4	**Moisture resistance** The enclosure of electrical components of a fully assembled vehicles shall comply with and be tested in accordance with IPX4 tested in accordance with EN 60335-1:2012, 15.1.	According to customer requirements, IPX4 test was conducted, the vehicle was checked with all electric functions maintained.	P ☒ F ☐ N/A ☐ N/T ☐

Absatz *Clause*	Anforderungen - Prüfungen / *Requirements - Tests*	Messergebnisse – Bemerkungen/ *Measuring results - Remarks*	Ergebnis *Result*
6.5	**Resistance to vibration for electric functions**		
6.5.1	**Requirements** This requirements applies to all PLEV classes 1 to 4. The vehicle shall withstand a vibration test representing the foreseeable use on roads and public areas. When tested according to the method described in 6.5.2, all electric functions shall be fully maintained. Verification shall be by function test after the vibration test.	After the vibration test, the vehicle was checked with all electric functions maintained. See Appendix A for the test curves.	P ☒ F ☐ N/A ☐ N/T ☐
6.5.2	**Test method** A random vibration test in accordance with EN 60068-2-64:2008 shall be performed. Install the vehicle to the shaker table so the input vibratory motion is perpendicular to the plane of movement of the vehicle (excitation in vertical axis). The vehicle shall be fixed at the wheel axles, if necessary, the wheels can be removed. If a fixation at the wheel axles is not possible, the vehicle can be clamped at the deck (footrest) or frame. Any test fixture used shall be as rigid and symmetrical as practicable. The mounting method(s) used shall be noted in the test report. When necessary to determine resonant frequencies, accelerometers shall be attached to the vehicle to measure and record the equipment's vibration response in the axis of vibration to determine resonant frequencies and amplification factors. Locations selected may include frame structure, handlebar, footrest, batteries or other large components and modules. The control accelerometer(s) shall be attached to the test fixture as near as practicable to the equipment mounting location. When more than one accelerometer is employed for test level control, the average of the accelerometer control signals of the acceleration power spectral densities (PSD) shall be used as the test level control. Before the random vibration test, perform a 0,5 g-PK sinusoidal scan from 5 Hz to 500 Hz at a sweep rate not exceeding 1,0 octave/minute. Record plots of response accelerometers at selected position on the vehicle to determine resonant frequencies and amplification factors. Apply the appropriate test level PSD of Table 3 for 15 h. During this random vibration period, also perform a PSD analysis of the vibration response measurements on the equipment.	Wheel size in diameter: 9.0 inches; spring on front and rear wheel support system; Pnuematic tyres; Condition A is adopted. Tested accordingly.	P ☒ F ☐ N/A ☐ N/T ☐

Absatz *Clause*	**Anforderungen - Prüfungen /** *Requirements - Tests*	**Messergebnisse – Bemerkungen/** *Measuring results - Remarks*	**Ergebnis** *Result*
	Repeat the sinusoidal scan. Any changes in vibration resonant frequencies shall be recorded. The vibration tests shall be performed under normal ambient environmental conditions with a temperature of +23 °C ± 5 °C (relative humidity < 85 %, normal atmospheric pressure). The appropriate random vibration test curve shall be selected from Table 2 depending on the wheel size and design of the vehicle. The test curves are given in Table 3 and Figure 1.		P ☒ F ☐ N/A ☐ N/T ☐

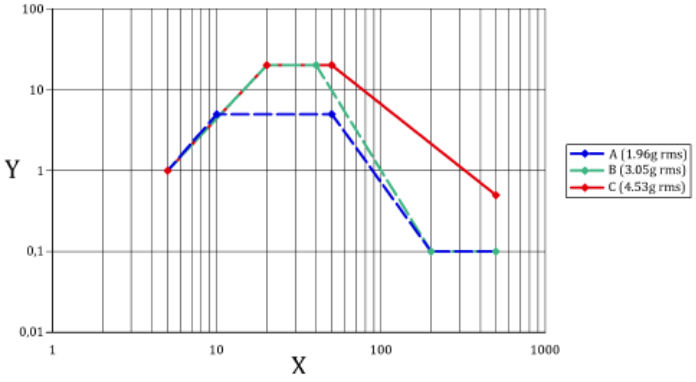
Table 2 — Categorization of vehicle for vibration tests

Design parameters				
Wheel size (outer diameter)	Suspension system			
	yes		no	
	Tire		Tire	
	Pneumatic	Solid rubber / elastomer	Pneumatic	Solid rubber / elastomer
< 10 inch (<254 mm)	A	B	B	C
≥ 10 inch (≥254 mm)	A	B	A	B

Table 3 —Test levels at test curve frequency break points

Acceleration Power Spectral Densities in $(m/s^2)^2/Hz$							
	5 Hz	10 Hz	20 Hz	40 Hz	50 Hz	200 Hz	500 Hz
A	1	5			5	0,1	0,1
B	1		20	20		0,1	0,1
C	1		20		20		0,5

Total rms: A: 19,2 m/s^2; B: 29,4 m/s^2; C: 44,4 m/s^2



Key

X frequency (HZ)

Y acceleration Power Spectral Density (PSD) $(m/s^2)^2/Hz$

Figure 1 — Random Vibration Test Curves for vehicles

Absatz *Clause*	Anforderungen - Prüfungen / *Requirements - Tests*	Messergebnisse – Bemerkungen/ *Measuring results - Remarks*	Ergebnis *Result*
7	**Driving power management**		
7.1	**Driving power activation**		
7.1.1	**Requirements** Driving power shall only be provided following at least two independent and dissimilar intentional actions by the user. In addition: a) For vehicles of class 1 or 2 with a partially electrically powered vehicle, the driving power shall not be delivered while moving forward at a speed of less than 3 km/h. Verification shall be by the test of 7.1.2. b) For vehicles of class 1 or 2, it shall be possible for the user to power-off the driving power at any time during use in accordance with the driving power procedure described by the manufacturer in the instruction manual (see 7.3 and 19.4). For vehicles of class 3 or 4, the Driving power management shall not power-off motor power at any specified speed. Verification shall be by inspection and function test. c) For vehicles of class 1 and 2, the cut-off of driving power shall take priority over the maintenance of power assistance (for example, if the user holds his accelerator grip while he is actuating the brake, the power assistance shall be cut off). Verification shall be by the test of 7.1.2. Compliance with the following requirements shall be checked by the test methods described in 7.1.2; d) Vehicles of class 3 or 4 shall act as follows: 1) Horizontal level foot rests (maintain constant speed), 2) Tilt back of foot rest shall result in a progressive controlled braking, 3) Foot rest tilt to the front shall result in a progressive controlled acceleration, 4) The vehicle shall be self-balancing in all operating states. Verification shall be by inspection and function test. e) When the vehicle approaches the maximum speed of its class, the driving power shall be reduced in such a way that the maximum speed limit will not be exceeded. The driving power shall be managed smoothly and progressively.	Driving power provided by three actions: Power on > push the vehicle to reach a speed of 3 km/h > operate the throttle. a) checked ok; b) power-off the driving power can be achieved at any time by releasing the throttle. c) when activating both throttle and brake lever, the power assistance is always cut-off. d) not such vehicle. e) max. speed is not exceeded, driving power is managed smoothly and progressively, not making the driver is hazardous situation.	P ☒ F ☐ N/A ☐ N/T ☐

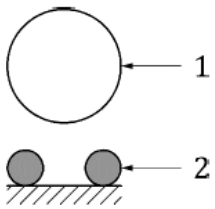
Absatz *Clause*	**Anforderungen - Prüfungen /** *Requirements - Tests*	**Messergebnisse – Bemerkungen/** *Measuring results - Remarks*	**Ergebnis** *Result*
	f) In the case where a class 1 or 2 vehicle is equipped with a mechanical brake system, the driving power shall be cut off at the commencement of braking (according to 15.4.2).	f) The driving power is cut-off when activating the brake levers.	P ☒ F ☐ N/A ☐ N/T ☐
	g) In the case where the vehicle is equipped with an electric brake, the driving power management shall be such that braking starts immediately.	g) The driving power is cut-off when activating the brake levers.	
	h) For self-balancing vehicles, the driving power shall ensure that the vehicle speed cannot exceed the maximum speed of the vehicle's class.	h) not such vehicles.	
	i) In case of overspeed during driving, the following shall apply to vehicles of class 3 or 4: 1) There shall be audible and if possible (in the particular vehicle) visual and other (physical) warnings to alert the user of a system issue. 2) In all cases, the vehicle shall be slowed automatically and brought to a safe speed (lower than the maximum speed).	i) not such vehicles.	
	j) In case of overheating of the driving power management during driving, the following shall apply for vehicles of class 3 or 4: 1) There shall be audible and if possible (in the particular vehicle) visual and other (physical) warnings to alert the user of a system issue. 2) In all cases, the vehicle shall be slowed automatically and brought to a safe stop. 3) It shall not be possible to drive the self-balancing vehicle until the vehicle's control system detects that the initiating problem has been corrected.	j) not such vehicles.	
	k) In case of insufficient battery power, the following shall apply for vehicles of class 3 or 4: 1) There shall be audible and if possible (in the particular vehicle) visual and other (physical) warnings to alert the user of a system issue. 2) In all cases, the vehicle shall be slowed automatically and brought to a safe stop. 3) It shall not be possible to drive the self-balancing vehicle until the vehicle's control system detects that the initiating problem has been corrected.	k) not such vehicles.	
	l) Acceleration Limitation 1) The acceleration of the vehicle shall be smooth without shocks and limited to 2 m/s2 in order to avoid unstable riding conditions. *NOTE see D.3 and D.12.*	l) The acceleration is measured 1.62m/s^2	

Absatz *Clause*	Anforderungen - Prüfungen / *Requirements - Tests*	Messergebnisse – Bemerkungen/ *Measuring results - Remarks*	Ergebnis *Result*

7.1.2	**Test method**
7.1.2.1	**Test conditions** a) The test may be carried out on a test track, a test bench or on a roller. b) A test track shall comply with 8.1.2.2. c) The speedometer shall be accurate to ± 2 %. d) The ambient temperature shall be between 5 °C and 35 °C. e) The maximum wind speed shall not exceed 3 m/s. f) The battery shall be fully charged in accordance with the manufacturer's instructions. g) The most onerous condition shall be applied (worst speed and gear ratio). h) With the vehicle operate under normal operation, but the motors are loaded to 33 % their locked rotor current by adjusting the load on its rotational axis in the forward direction.
7.1.2.2	**Test procedure** a) For vehicles class 1 or 2, check that no driving power is delivered while moving forward at a speed of less than 3 km/h. Compliance shall be checked, in accordance with the technology used, either by: 1) when attempting to drive the vehicle forward using the normal controls or procedures for speeds less than 3 km/h, measuring the no-load current or checking the torque delivered to the driving wheel b) For vehicles of class 1 or 2 check whether the power assistance is cut-off when the brake is applied. Compliance shall be checked, in accordance with the technology used, by: 1) measuring the no-load current or checking the torque delivered to the driving wheel before and after actuating the direct or indirect braking system. 2) reproducing the power assistance cut-off situation 30 times. The power assistance shall not continue after actuation of the braking system. Power assistance may resume immediately after releasing the braking device. c) At the end of the tests, the power assistance cut-off systems shall be made to fail (to simulate, for example, cable detachment or failure of a sensor). It shall no longer be possible to activate the power assistance by any means whatsoever. *NOTE These tests only check compliance with power cut-off requirements. For braking performance see 15.4.* d) With the vehicle at standstill or if the electric power doesn't start at 0 km/h: bring the vehicle in a stable riding position at 6 km/h (±2 km/h) and with the vehicle operate under normal operation, but the motors are loaded to 33 % of their locked rotor current by adjusting the load on its rotational axis in the forward direction. Move the acceleration device to its maximum position and keep it in this position until the vehicle reaches 60 % of its maximum speed. Measure the time from the start until the vehicle reaches 50 % of its maximum speed. Calculate the acceleration.

Absatz *Clause*	Anforderungen - Prüfungen / *Requirements - Tests*	Messergebnisse – Bemerkungen/ *Measuring results - Remarks*	Ergebnis *Result*
7.2	**Power failure of control system** For class 1 and class 2 vehicles, in the event of an electrical power failure the vehicle shall be able to brake normally or, shall come to a standstill with a deceleration between (1,5 – 2) m/s2. For class 3 and class 4 vehicles, a fault condition in the power control system shall be indicated by a warning signal (visual, audible, vibrating…) on the handlebar, the vehicle itself or to the remote control (see Clause 17). In a driving condition the loss of connection to the warning device, on the remote control, shall result in a speed reduction to 6 km/h or less for a Class 4 vehicle; the speed reduction shall happen in a safe manner without creating additional hazards with corresponding audio notification and tilt back of decks on self-balancing vehicles.	The vehicle can brake normally, as mechanical disc brakes are fitted. Not such vehicles. Not class 4, not applicable.	P ☒ F ☐ N/A ☐ N/T ☐
7.3	**Unintended or unauthorized use of vehicle** Means shall be provided to prevent an unintended or unauthorized use of the vehicle, e.g. keys, locks, electronic control device. *NOTE see D.16.*	A mechanical lock with a key is installed. After the vehicle is locked, the vehicle can be not started with motor driving.	P ☒ F ☐ N/A ☐ N/T ☐
8	**Speed limitation**		
8.1	**Pedestrian mode**		
8.1.1	**General** Vehicles classes 2 and 4 shall be equipped with a pedestrian mode for limiting the speed to a maximum of 6 km/h. A distinctive and visible warning light shall be provided to indicate both to the user and others in the vicinity of the vehicle when pedestrian mode is in operation. It shall be active only when the pedestrian mode is activated. Verification shall be in accordance with 8.1.2.	The vehicle is provided with a pedestrain mode, the max. speed is 5.7 km/h under this mode. Under pedestrain mode, the front and rear light is on. A walk symbol is shown on the display.	P ☒ F ☐ N/A ☐ N/T ☐

Absatz *Clause*	Anforderungen - Prüfungen / *Requirements - Tests*	Messergebnisse – Bemerkungen/ *Measuring results - Remarks*	Ergebnis *Result*

8.1.2	**Test method**
8.1.2.1	**Test conditions** a) The test may be carried out on a test track, a test bench or on a roller. b) The speed measuring apparatus and test conditions shall have the following characteristics: 1) accuracy: ± 2 %; 2) resolution: 0,1 km/h. c) The ambient temperature shall be between 5 °C and 35 °C. d) Maximum wind speed: 3 m/s. e) The battery shall be fully charged in accordance with the manufacturer's instructions. f) With the vehicle operate under normal operation, but the motors are loaded to 33 % of their locked rotor current by adjusting the load on its rotational axis in the forward direction.
8.1.2.2	**Characteristic of the test track** The gradient of the track shall not exceed 0,5 %. If the gradient is less than 0,2 % carry out all runs in the same direction. If the gradient lies between 0,2 % and 0,5 % carry out alternate runs in opposite directions. The surface shall be hard, of concrete or fine asphalt free from loose dirt or gravel. The minimum coefficient of friction between the dry surface and the vehicle tyre shall be 0,75.
8.1.2.3	**Characteristic of the test bench** The test bench shall simulate normal road conditions.
8.1.2.4	**Characteristic of the roller** The test roller shall support with bearing to decrease the resistance, load need to add to the roller to reach rated current (see Figure 2).  **Key** 1 Wheel 2 Roller (Ø 25 cm, add a load to the roller to reach rated current) **Figure 2 — Example of roller (side view of a wheel)**
8.1.2.5	**Test procedure** a) Prepare the vehicle by running it for 5 min at 80 % of the speed corresponding to maximum power as declared by the manufacturer, then stop it. b) Actuate the mode for limiting the speed to 6 km/h (or less) and check whether the speed operating range of the power assistance is limited to 6 km/h (or a lower value). *NOTE The speed in pedestrian mode is set by the manufacturer according to local regulation.*

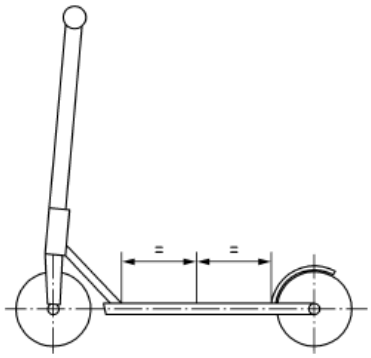
Absatz *Clause*	Anforderungen - Prüfungen / *Requirements - Tests*	Messergebnisse – Bemerkungen/ *Measuring results - Remarks*	Ergebnis *Result*
8.2	**Maximum speed with power assistance**		
8.2.1	**Requirements** The maximum speed for which the electric motor gives assistance shall be in accordance with the maximum permitted speed for the class. It may differ by (±10 %) of the maximum speed marked on the vehicle given in the instruction manual/sheet and determined according to the test method described in 8.2.2. The maximum speed in this mode shall not exceed 25 km/h.	The measured max. speed: 25km/h.	P ☒ F ☐ N/A ☐ N/T ☐
8.2.2	**Test method**		
8.2.2.1	**Test conditions** The test shall be performed in accordance with 8.1.2.1, 8.1.2.2 and 8.1.2.3.		
8.2.2.2	**8.2.2.2 Test procedure** **8.2.2.2.1 Test for vehicle with 100 % electric propulsion** If performed with a test bench: a) Put the vehicle on the bench and bring it to the maximum achievable speed and maintain the speed for 60 s at least; b) Measure the vehicle speed by measuring the speed of the test bench. If performed with a test track: c) Put the vehicle on the track and bring it to the maximum achievable speed and maintain the speed for 60 s at least; d) Measure the vehicle speed. e) The measured speed shall not exceed 25 km/h (±10) % and the maximum speed (±10) % indicated by the manufacturer in the instruction manual/sheet if lower. **8.2.2.2.2 Test for vehicle with a hybrid propulsion system** a) The test shall be carried out on a bench powered such that the speed of the PLEV can be increased to 120 % of the maximum speed achievable solely under electrical power and the speed of the vehicle shall be measurable in accordance with 8.1.2.1; b) Put the vehicle on the bench and bring it to the maximum speed achievable solely with vehicle electrical power. c) Using the test bench drive increase the vehicle speed to 120 % of the maximum speed achievable solely with vehicle electrical power and maintain for 30 s. The measured speed shall not exceed 25 km/h (±10) % and the maximum speed (±10) % indicated by the manufacturer in the instruction manual/sheet if lower. d) Disconnect the test bench drive while maintaining the vehicle speed control at maximum achievable setting. Measure the vehicle speed.		
8.3	**Reverse mode**		
8.3.1	**Requirement** Vehicles with a reverse driving function shall be equipped with a device limiting its speed to 6 km/h when travelling in reverse. If travelling in reverse, an active sound signal shall be audible.	No such mode.	P ☐ F ☐ N/A ☒ N/T ☐

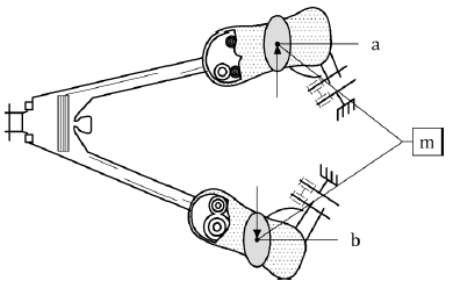
Absatz *Clause*	Anforderungen - Prüfungen / *Requirements - Tests*	Messergebnisse – Bemerkungen/ *Measuring results - Remarks*	Ergebnis *Result*
8.3.2	**Test method** The test shall be carried out on a test bench as follows: a) Prepare the vehicle by running it for 5 min at 80 % of the speed corresponding to maximum power as declared by the manufacturer, then stop it. b) Drive the test bench to simulate driving the vehicle in the reverse direction of travel at the maximum achievable speed. Check that the speed operating range of the power assistance is limited to 6 km/h (or a lower value).	No such mode.	P ☐ F ☐ N/A ☒ N/T ☐
9	**Electromagnetic compatibility**		
9.1	**Emission** Vehicle class 1 and 2 shall conform to Annex B. Vehicle class 3 and 4 shall conform to EN 61000-6-3:2007 apply with the following modification. The vehicle operated as described in B.2.2.3. *NOTE see D.11.*	See attachment 1-EMC test report CN24RI04 001. Tested per Annex B.	P ☒ F ☐ N/A ☐ N/T ☐
9.2	**Immunity** Vehicle class 1 and 2 shall conform to Annex B. Vehicle class 3 and 4 shall conform to EN IEC 61000-6-1:2019 apply with the following modification. The vehicle operated as described in B.4.4. Specific performance criterion for PLEV: — Class A: all functions of vehicle perform as designed during and after exposure to a disturbance. — Class B: all functions of vehicle perform as designed during exposure; however, one or more of them may go beyond the specified tolerance. All functions return automatically to within normal limits after exposure is removed. Memory functions shall remain class A. — Class C: one or more functions of vehicle do not perform as designed during exposure but return automatically to normal operation after exposure is removed. *NOTE see D.11.*	See attachment 1-EMC test report CN24RI04 001. Tested per Annex B.	P ☒ F ☐ N/A ☐ N/T ☐
9.3	**Battery charger** As a PLEV is not intended to be used while charging on the electric network, for integrated charger the whole PLEV plus integrated charger shall be tested for EMC according to the applicable standards. The following European Standards are applicable EN 55014-1, EN 55014-2, EN 61000-3-2, EN 61000-3-3.	Model: FY1505462000 Factory: Shenzhen Fuyuan Electric Power Supply Co., Ltd. Review on submitted report: 65.760.22.104.01 by TUV SUD Certification and Testing(China) Co., Ltd. Shenzhen branch, dated on 2022-06-27.	P ☒ F ☐ N/A ☐ N/T ☐

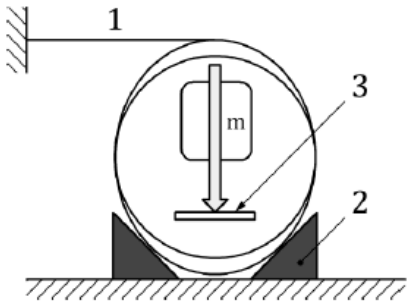
Absatz *Clause*	Anforderungen - Prüfungen / *Requirements - Tests*	Messergebnisse – Bemerkungen/ *Measuring results - Remarks*	Ergebnis *Result*
10	**Charging of batteries**		
10.1	**General** If a vehicle has an integrated and built-in battery charging system (i.e; integrated charger), the user shall be protected against hazards due to accidental contact with the charging connections on the vehicle and its charging systems. For enclosures of charging system, see 6.4 Moisture resistance. Battery charging systems shall be in accordance with EN IEC 62485 series and EN 60204-1 or EN 60335-2-29:2004 as appropriate. The charging system shall prevent any hazards arising because of overloading, overcharge and overcurrent and over discharge determined according to the test method described in 10.2.	Not an integrated and built-in battery charging system.	P ☒ F ☐ N/A ☐ N/T ☐
10.2	**Test method** Component parts in the charging system are faulted as below 1) to 4), one at a time, if the outcome of such a fault is uncertain based upon analysis. 1. open-circuit at the terminal of any component, other than a monolithic integrated circuit. 2. short-circuit of capacitors, unless they comply with EN 60384-14:2013. 3. short-circuit of any two terminals of an electronic component, other than a monolithic integrated circuit. This fault is not applied between the two circuits of an optocoupler. 4. short-circuit is introduced to the charging system across a component or between adjacent PCB tracks at a location expected to produce the most unfavourable results to evaluate the effect of back-feed from the battery. For each fault condition introduced, the state of the battery before charging is as follows: A series configured battery shall have a deliberate imbalance. The imbalance is introduced into a fully discharged battery by charging one cell to approximately 50 % of full charge or less. Conduct the charging test, each cell voltage is continuously monitored to determine if it has exceeded the limit condition. Venting of the cells is permitted. For vehicles with external battery charging system, charging contacts and plugs shall be designed in a way that accidently touching live parts is prevented (e.g. caps for plugs and outlets). Voltage between charging contacts shall conform to appropriate standards according to the application and/or environment of the charging systems, such as EN 60204-1, EN 61140:2016, EN 60335-2-29:2004 and EN 61851:2001 (all parts). Battery charging currents shall be chosen to be as low as reasonably practicable.	Plugs and appliance coupler should complied with local regulations and evaluated with battery charger. Review on submitted report: 211-800576-000 byTÜV SUD Certification and Testing(China) Co., Ltd, Shenzhen branch, dated on 2022-05-10. Model: FY1505462000 Factory: Shenzhen Fuyuan Electric Power Supply Co., Ltd. Input AC100-240V~50/60Hz; Output 54.6VDC 2.0A	P ☐ F ☐ N/A ☒ N/T ☐

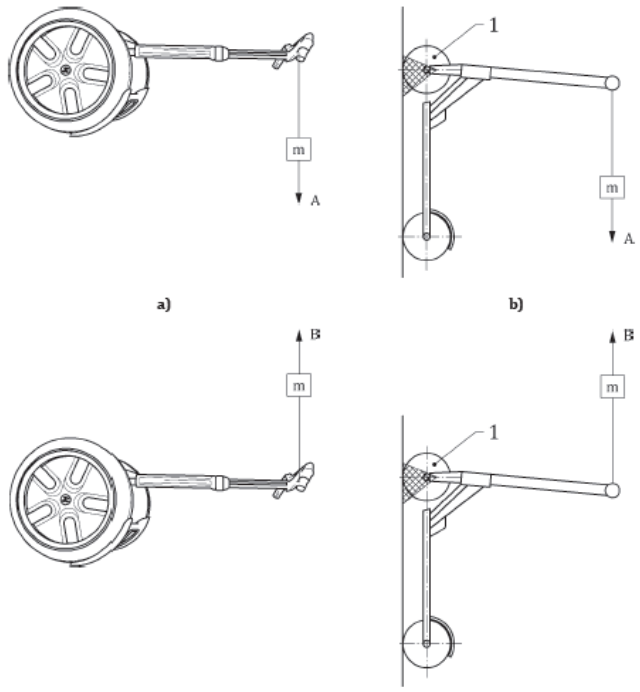
Absatz *Clause*	Anforderungen - Prüfungen / *Requirements - Tests*	Messergebnisse – Bemerkungen/ *Measuring results - Remarks*	Ergebnis *Result*
10.3	**Safeguarding and complementary protective measures** The following measures shall be applied where appropriate: — charging systems shall be designed in such a way that the charging connections are only activated when the vehicle is connected to them; — charging systems shall display the charging status or give a signal when the battery is fully charged; — charging systems shall be designed in such a way that the correct charging of the battery is automatically supervised, and thus hazards caused by overloading or charging of deeply discharged batteries are prevented.	 Complied; A LED indicator displays the charging status; Complied.	P ☒ F ☐ N/A ☐ N/T ☐
11	**Energy storage within the vehicle**		
11.1	**Requirements** The vehicle as well as the sets of energy storage (i.e. battery) shall be designed and constructed such as to prevent any risk of fire and mechanical deterioration resulting from foreseeable abnormal use. Compliance with this requirement is checked by the test described in 11.2. During the test, the vehicle and the batteries shall not emit any flames, molten metal or release any toxic or flammable gas in hazardous amounts. Protective enclosures shall show no damage when checked visually. Safety and compatibility of the charger/battery assembly shall be provided in accordance with the charger/battery manufacturer's specifications. Any exposed person shall be protected from direct or indirect contact with live parts on the vehicle. The energy storage shall be protected in order to prevent any accidental short circuit. It is necessary to ensure that batteries are protected against any overcharging, a suitable protective device against overheating and short circuits shall be provided. *NOTE Examples of solutions are indicated in Annex C.*	Battery model: AFT48V/15.6Ah; Test report no. of the battery (for IEC 62133-2:2017, IEC 62133-2:2017/AMD1:2021): TCT240307B018 by Shenzhen TCT Testing Technology CO., LTD., on 2024-03-19. Complied. Checked ok. Checked ok.	P ☒ F ☐ N/A ☐ N/T ☐
11.2	**Test method** The test shall be conducted according to EN 62133 (all parts) or, as follows: a) Battery terminals are short-circuited using fully charged batteries b) Motor terminals are short-circuited; all of the controls are in ON position and batteries fully charged. c) The vehicle is operated with the electric motor or drive system locked so as to fully discharge the battery or until the system stops. d) The battery is charged for double the recommended charging period or for 24 h, choosing the longest of these two periods. Verification: there shall be no visible damage for a), b), c) and d) and no overvoltage for d).		

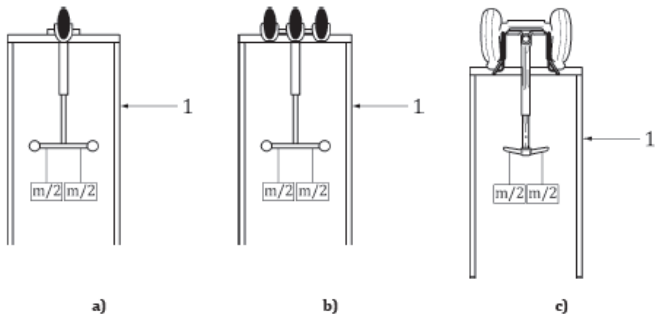
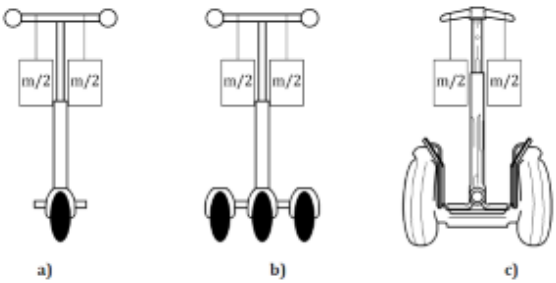
Absatz *Clause*	Anforderungen - Prüfungen / *Requirements - Tests*	Messergebnisse – Bemerkungen/ *Measuring results - Remarks*	Ergebnis *Result*
12	**Structural integrity**		
12.1	**General**		
12.1.1	**Numbers and conditioning of samples** In general, for static, impact and fatigue tests, each test shall be carried out on a new sample, but if only one sample is available, it is permissible to carry out all of the tests on the same sample by following the fatigue, then static and then impact test sequence. When more than one test is carried out on the same sample, the test sequence shall be clearly recorded in the test report or record of testing. It should be noted that if more than one test is carried out on the same sample, earlier tests can influence the results of subsequent tests. Also, if a sample fails when it has been subjected to more than one test, a direct comparison with the result of a single test is not possible. For all strength tests, samples shall be fully assembled.	Informative.	P ☒ F ☐ N/A ☐ N/T ☐
12.1.2	**Test condition tolerances** Unless stated otherwise, tolerances on the nominal values shall be: — forces and torques 0/+ 5 % — masses +/– 1 % — dimensions +/– 1 mm — angles +/– 1° — duration +/– 5 s — temperatures +/– 2 °C — pressures +/– 5 %	Test equipment/device meet the tolerance requirements.	P ☒ F ☐ N/A ☐ N/T ☐
12.1.3	**Crack detection** Standardized methods may be used to highlight the presence of cracks when visible cracks are specified as criteria of failure in the tests described in this standard. *NOTE 1 For example, suitable dye-penetrant methods are specified in EN ISO 3452 (all parts).* *NOTE 2 See D.9.*	Dye-penetrant used for emphasizing presence of cracks after strength tests.	P ☒ F ☐ N/A ☐ N/T ☐
12.2	**Static load test**		
12.2.1	**Deck/frame**		
12.2.1.1	**Requirement** When tested according to the method described in sub Clauses 12.2.1.2, 12.2.1.3 or 12.2.1.4 there shall be no cracks or fractures, or collapse of the structure, or unfolding. Where the construction of the vehicle does not allow the full mass to be applied in normal use to each deck then the maximum mass is divided by two to achieve the test load for each deck.	No cracks, factures, collapse of the structure or unfolding occurred.	P ☒ F ☐ N/A ☐ N/T ☐

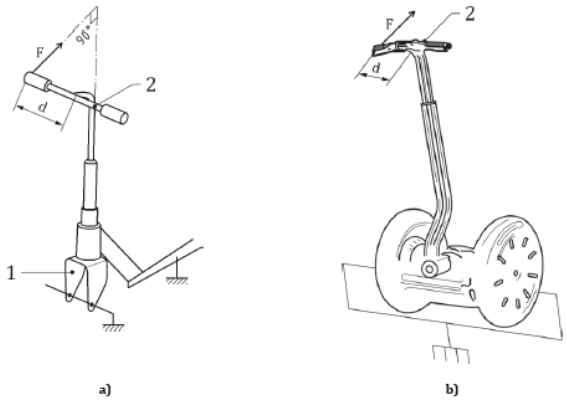
Absatz *Clause*	**Anforderungen - Prüfungen /** *Requirements - Tests*	**Messergebnisse – Bemerkungen/** *Measuring results - Remarks*	**Ergebnis** *Result*
12.2.1.2	**Test method – 2-wheeled single track vehicle** Progressively apply a mass of 100 kg or, when greater, a mass equal to the maximum permissible payload marked on the vehicle in accordance with 19.2.1 and multiplied by a safety factor of 2,5 during 1 min with a flat device having a surface of 100 mm × 100 mm to the centre of one or two deck(s) (see Figure 3). *NOTE 1 The minimum mass of 100 kg represents a maximum permitted payload marked on the vehicle of 40 kg multiplied by a safety factor of 2,5.* *NOTE 2 For a permissible payload of 120 kg (according to 19.2.1), the total mass "m" is 300 kg.*  **Figure 3 — Centre of the deck** If plastic material is used for the deck or steering system the kick scooter has to be conditioned for at least 6 h at a temperature of (−5 ± 1) °C. Start the test within 1 min of removing the PLEV from the conditioning environment and complete it within 5 min.	Nominal max. load: 120kg; Applied mass: 300kg.	P ☒ F ☐ N/A ☐ N/T ☐

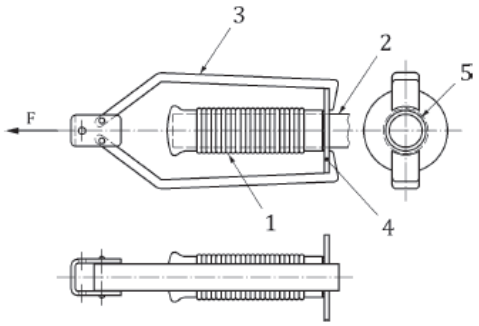
Absatz *Clause*	**Anforderungen - Prüfungen /** *Requirements - Tests*	**Messergebnisse – Bemerkungen/** *Measuring results - Remarks*	**Ergebnis** *Result*
12.2.1.3	**Test method – 3-wheeled vehicle** Progressively apply a mass of 100 kg or, when greater, a mass equal to the maximum permissible payload marked on the vehicle in accordance with 19.2.1 and multiplied by a safety factor of 2,5 during 1 min with a flat device having a surface of 100 mm × 100 mm to the centre of the two following positions a and b simultaneously (see Figure 4). *NOTE 1 The minimum mass of 100 kg represents a maximum permitted payload marked on the vehicle of 40 kg multiplied by a safety factor of 2,5.* *NOTE 2 For a permissible payload of 120 kg (according to 19.2.1), the total mass "m" is 300 kg.* If plastic material is used for the deck or steering system the 3-wheeled vehicle has to be conditioned for at least 6 h at a temperature of (−5 ± 1) °C. Start the test within 1 min of removing the PLEV from the conditioning environment and complete it within 5 min.  **Key** a Position for application force b Position for application force m total mass **Figure 4 — Positions for application forces**	Not such vehicle.	P ☐ F ☐ N/A ☒ N/T ☐

Absatz *Clause*	**Anforderungen - Prüfungen /** *Requirements - Tests*	**Messergebnisse – Bemerkungen/** *Measuring results - Remarks*	**Ergebnis** *Result*
12.2.1.4	**Test method – self-balancing vehicle** Progressively apply a mass of a minimum of 100 kg or, when greater, a mass equal to the maximum permissible payload marked on the vehicle in accordance with 19.2.1 and multiplied by a safety factor of 2,5 during 1 min with a flat device having a surface of 100 mm × 100 mm to the centre of each deck (see Figure 5). *NOTE 1 The minimum mass of 100 kg represents a maximum permitted payload marked on the vehicle of 40 kg multiplied by a safety factor of 2,5.* *NOTE 2 For a permissible payload of 120 kg (according to 19.2.1), the total mass "m" is 300 kg.* If plastic material is used for the deck or steering system the self-balancing vehicle has to be conditioned for at least 6 h at a temperature of (−5 ± 1) °C. Start the test within 1 min of removing the PLEV from the conditioning environment and complete it within 5 min.  **Key** 1 Fixing point 2 wedge 3 deck m total mass **Figure 5 — Position for application forces**	Not such vehicle.	P ☐ F ☐ N/A ☒ N/T ☐

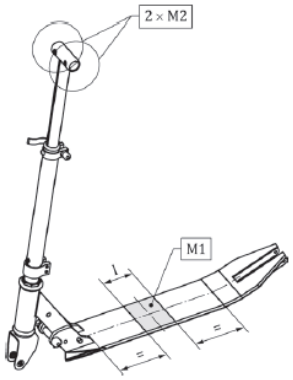
Absatz *Clause*	**Anforderungen - Prüfungen /** *Requirements - Tests*	**Messergebnisse – Bemerkungen/** *Measuring results - Remarks*	**Ergebnis** *Result*
12.2.2	**Handle bar and steering column**		
12.2.2.1	**Bending test**		
	12.2.2.1.1 Requirements When tested according to the method described in 12.2.2.1.2, there shall be no cracks or fractures, or deterioration of the operation of the handlebar or steering column.	Complied.	P ☒ F ☐ N/A ☐ N/T ☐
	12.2.2.1.2 Test methods The steering column shall be in maximum high position and centrally loaded with a 50 kg mass, applied in directions A and B, each for 1 min, as shown in Figure 6. The handlebar shall be in maximum high position and loaded with a 50 kg mass divided in two, for 1 min, as shown in Figure 7.	50kg mass on both direction perpendicular to handlebar stem tested; 50kg mass in the direction parallel to the handlebar stem tested.	
	 **Key** 1 example of a fixation of the front wheel (the axle is fixed and the kick scooter is free for rotating) A Direction A B Direction B m mass of 50 kg **Figure 6 — Steering column – Bending test in directions A and B**		

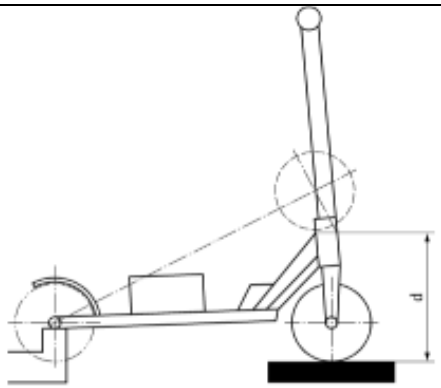
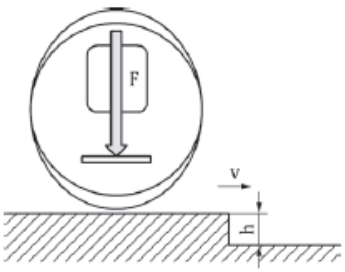
Absatz *Clause*	**Anforderungen - Prüfungen /** *Requirements - Tests*	**Messergebnisse – Bemerkungen/** *Measuring results - Remarks*	**Ergebnis** *Result*
	 **Key** 1 example of a fixation (the axle is fixed and the wheel is free for rotating) m total mass of 50 kg **Figure 7 — Steering column - structural test**		P ☒ F ☐ N/A ☐ N/T ☐
12.2.2.2	**Vertical loading test**		
	12.2.2.2.1 Requirements Following the test performed according to the method described in 12.2.2.2.2, there shall be no cracks or fractures, or deterioration of the operation of the handlebar or steering column. Nor shall there be any movement of the telescopic part. **12.2.2.2.2 Test method** The handlebar shall be assembled in accordance with the manufacturer's instruction manual/sheet. Draw out the telescopic tube up to half of its adjustment range (±1 cm) and engage the locking system. Load the vehicle by applying a mass "m" of 50 kg simultaneously to the centre of each hand grip in directions A as shown in Figure 8. Maintain the load for 1 min. Determine whether the head tube has not become separated, the handlebar has not moved, the locking systems are still operational and engaged and whether the operation of the handlebar or steering column has not deteriorated.  Key m = total mass of 50 kg Figure 8 — Handlebar - Vertical loading test in direction A	Complied. No telescopic part on the stem. 25kg mass on each side of the handlebar at the center of each hand grip tested. (total 50kg)	P ☒ F ☐ N/A ☐ N/T ☐

Absatz *Clause*	**Anforderungen - Prüfungen /** *Requirements - Tests*	**Messergebnisse – Bemerkungen/** *Measuring results - Remarks*	**Ergebnis** *Result*
12.2.2.3	**Torque test** **12.2.2.3.1 Requirement** When tested according to the method described in 12.2.2.3.2, there shall be no movement of the handlebar stem in relation to the steering tube. **12.2.2.3.2 Test method** If necessary, assemble the handlebar and the steering column according to the manufacturer's instructions. — Lock the fork in rotation. — Apply a torque C of 20 Nm once in each direction of possible rotation in a plane perpendicular to the axis of the handlebar/fork assembly. Maintain each torque for 1 min. *NOTE The exact method for applying the torque may vary, and examples are illustrated in Figure 9.*  **Key** 1 fork 2 handlebar F force (applicable at extremity of d) d length of 1/2 handlebar C Fxd **Figure 9 — Handlebar – Torque test**	Complied. 20N.m torque applied.	P ☒ F ☐ N/A ☐ N/T ☐

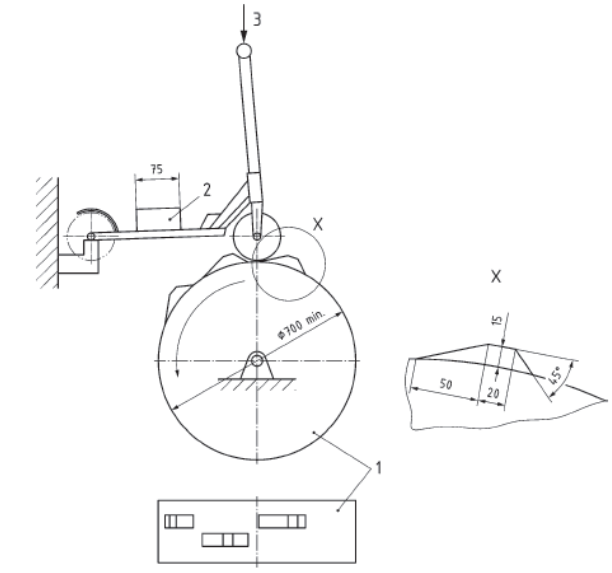
Absatz *Clause*	**Anforderungen - Prüfungen /** *Requirements - Tests*	**Messergebnisse – Bemerkungen/** *Measuring results - Remarks*	**Ergebnis** *Result*
12.2.2.4	**Handlebar grips and plugs** **12.2.2.4.1 Requirements** The ends of the handlebar shall be fitted with grips or end plugs. When tested according to the method described in 12.2.2.4.2, the grips or plugs shall withstand a dismantling force of 70 N. **12.2.2.4.2 Test method** Leave the handlebar to reach ambient temperature then apply a force of 70 N to the grip or plug in the dismantling direction. Maintain the force for 1 min. An example of handlebar grip drawing attachment is given is Figure 10.  **Key** 1 handlebar grip 2 handlebar 3 drawing attachment 4 hooking ring 5 clearance NOTE The hooking ring can be divided **Figure 10 — Example of handlebar grip drawing attachment**	Fitted with grips; Not removed.	P ☒ F ☐ N/A ☐ N/T ☐

Absatz *Clause*	**Anforderungen - Prüfungen /** *Requirements - Tests*	**Messergebnisse – Bemerkungen/** *Measuring results - Remarks*	**Ergebnis** *Result*
12.2.2.5	**Telescopic handlebar (if fitted)** The handlebar stem shall be provided with one of the two following means to guarantee a safe insertion depth into the steering column: a) the handlebar stem shall be provided with a permanent, transverse mark, of a length greater than or equal to the external diameter of the handlebar stem clearly indicating the minimum depth for inserting its rod into the steering column. The insertion mark shall be positioned at least 2,5 times the external diameter of the rod from the lower end of the handlebar stem. The length of the solid section of the handlebar stem below the mark shall be at least equal to the external diameter of the rod; b) the handlebar stem shall be provided with a permanent stop to prevent it from being drawn out of the steering column beyond the minimum insertion depth defined in a).	Complied with b).	P ☒ F ☐ N/A ☐ N/T ☐
12.3	**Frontal impact resistance**		
12.3.1	**Requirements for class 2** When tested according to the method described in 12.3.3, there shall be no visible cracks or fractures in any point of the folding mechanism -head tube-handlebar assembly. There shall be no visible cracks or fractures in any part of the frame and there shall be no separation of any elements of the suspension system. The assembly remains operational even if significant clearances are found. These clearances are acceptable if they do not involve the safety of the user. In particular, the locking of the folding system, if any, shall be checked when the scooter is unfolded. If applicable, the folding mechanisms shall remain locked.	Complied.	P ☒ F ☐ N/A ☐ N/T ☐

Absatz *Clause*	**Anforderungen - Prüfungen /** *Requirements - Tests*	**Messergebnisse – Bemerkungen/** *Measuring results - Remarks*	**Ergebnis** *Result*
12.3.2	**Test method for vehicle of class 2** Adjust the handlebar at the maximum height. The frame is mounted on a rigid fixture by the rear axle attachment points. The frame is loaded with masses and can turn around the rear axle. The assembly is rotated about the rear axle and then let falling down on the anvil. M1: 50 kg; M2: 2x10 kg As shown in Figure 11, mount the assembly at its rear axle attachment points so that it is free to rotate about the rear axis in a vertical plane. The sample shall be fitted with the front wheel Securely fix mass M1 on the deck. The centre of the mass is aligned with the centre of the deck (Figure 11). The length of the platform is 100 mm and it shall cover the whole width of the deck. Securely fix masses M2 on each side of the handlebar (see Figure 11). Support the front fork on a flat steel anvil so that the frame is in its normal position of use. Rotate the assembly around the rear axis until the distance d between the wheel and the anvil is (200 ± 1) mm (see Figure 12). Then allow the assembly to fall freely to impact on the anvil. Repeat the test and then check for damages.  Key M1 Mass M1 M2 Mass M2 l length Figure 11 — Falling frame impact test loading	50kg applied on deck; 20kg on handlebar. Impact height 200mm; Two times test finished.	P ☒ F ☐ N/A ☐ N/T ☐

Absatz *Clause*	**Anforderungen - Prüfungen /** *Requirements - Tests*	**Messergebnisse – Bemerkungen/** *Measuring results - Remarks*	**Ergebnis** *Result*
	 **Key** d distance between the wheel and the anvil **Figure 12— Falling frame - height of fall**		P ☒ F ☐ N/A ☐ N/T ☐
12.3.3	**Requirements for class 4** When tested according to the method described in 12.3.4, there shall be no visible cracks or fractures in any part of the frame and there shall be no separation of any elements of the suspension system. The assembly remains operational even if significant clearances are found. These clearances are acceptable if they do not involve the safety of the user.	Not such vehicle type.	P ☐ F ☐ N/A ☒ N/T ☐
12.3.4	**Test method for vehicle of class 4** The vehicle shall jump/drive over at 8-10 km/h of a pavement step down (foreseeable risk) where the step should be limited to 1/4 height of the wheel diameter (see Figure 13). The test shall be conducted with the mass of the maximum design load separated to the two platforms. If appropriate, tyre pressure shall be adjusted according to the maximum value given by the manufacturer. Repeat the test and then check for damages.  **Key** F 1/2 of max design load on each footrest V velocity (8–10 km/h) h 1/4 of the wheel diameter **Figure 13 — Falling impact test**	Not such vehicle type.	P ☐ F ☐ N/A ☒ N/T ☐

Absatz *Clause*	Anforderungen - Prüfungen / *Requirements - Tests*	Messergebnisse – Bemerkungen/ *Measuring results - Remarks*	Ergebnis *Result*
12.4	**Fatigue test (dynamic)**		
12.4.1	**General** All types of vehicles fitted with a mechanical linked handlebar shall be subjected to this test. The head tube/steering clearance/fork link can influence failures during handlebar fatigue tests. For this reason, a handlebar shall always be tested on a complete product. When there is a folding mechanism, this enables the handlebar's strength to be tested at the same time. In the case of suspension frames where the rigidity of the suspensions can be adjusted, adjust the suspensions to provide maximum stiffness. In the case of a pneumatic damper for which the air pressure cannot be adjusted, replace the suspension unit with a rigid link, making sure that the end fastening systems and the lateral rigidity accurately simulate the characteristics of the original system. For suspension frames on which the chain stays do not have pivots but use the bending phenomenon, check that any dampers are adjusted to provide the minimum strength in order to ensure a suitable check of the frame. When a suspension frame has adjustable supports or links to vary the strength of the scooter against the ground-contact forces or to modify the attitude of the scooter, position these adjustable components to ensure maximum forces in the frame.	A complete product is tested. Folding mechanism fitted. Not adjustable suspensions. No pneumatic damper. Not such frame.	P ☒ F ☐ N/A ☐ N/T ☐
12.4.2	**Requirements** When tested according to the method described in 12.4.3 to 12.4.5, there shall be no visible cracks or fractures in any point of the folding mechanism -head tube-handlebar assembly. There shall be no visible cracks or fractures in any part of the frame and there shall be no separation of any elements of the suspension system. The assembly remains operational even if significant clearances are found. These clearances are acceptable if they do not involve the safety of the user. In particular, the locking of the folding system, if any, shall be checked when the scooter is unfolded.	Tested satisfactory. No significant clearances found.	P ☒ F ☐ N/A ☐ N/T ☐

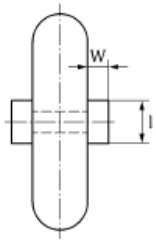
Absatz *Clause*	**Anforderungen - Prüfungen /** *Requirements - Tests*	**Messergebnisse – Bemerkungen/** *Measuring results - Remarks*	**Ergebnis** *Result*
12.4.3	**Test method for a 2-wheeled single track vehicle** Use a new product for the test. A complete vehicle shall withstand the fatigue test. This test is carried out on a test apparatus as shown in Figure 14: — a circumferential speed of 0,8 m/s — a distance of 25 km — a diameter of the drum of minimum of 700 mm — a mass of 100 kg shall be placed centrally on the free space of the deck (see Figure 3) — a mass of 10 kg shall be placed on the handlebar in maximum extended position — the distance between the raised sections shall be such that the vehicle passes over one ramp every 1,5 s. For testing multi-track vehicles, the raised sections shall be displaced so that the wheels do not travel over these raised sections simultaneously. The sections shall be spaced so that each wheel travels over two sections per second.  **Key** 1 drum 2 mass (centre of deck) 3 mass (centre of handlebar) **Figure 14 — Test device for fatigue test**	Test speed: 2.9km/h. Travel distance: 25km. Nominal max. load: 120kg Applied load: 120kg+10kg. The raised sections on the roller complied with requirements.	P ☒ F ☐ N/A ☐ N/T ☐

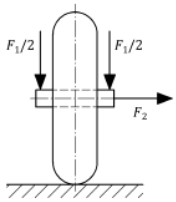
Absatz *Clause*	**Anforderungen - Prüfungen /** *Requirements - Tests*	**Messergebnisse – Bemerkungen/** *Measuring results - Remarks*	**Ergebnis** *Result*
12.4.4	**Test method for a 3-wheeled vehicle** Use a new product for the test. A complete vehicle shall withstand the fatigue test. This test is carried out on a test apparatus as shown in Figure 14: — a circumferential speed of 0,8 m/s — a distance of 25 km. — a diameter of the drum of minimum of 700mm — a mass of 100 kg shall be placed centrally on the free space of the deck (see Figure 3). — a mass of 10 kg shall be placed on the handlebar in maximum extended position. — the distance between the raised sections shall be such that the vehicle passes over one ramp every 1,5 s. For testing multi-track vehicles, the raised sections shall be displaced so that the wheels do not travel over these raised sections simultaneously. The sections shall be spaced so that each wheel travels over two sections per second.	Not such vehicle.	P ☐ F ☐ N/A ☒ N/T ☐
12.4.5	**Test method for a self-balancing vehicle**		
12.4.5.1	**General** This test consists of 3 steps: (1) setting-up for the test, (2) test motion and (3) inspection. This test utilizes three apparatus: (1) test road, (2) a test load and (3) a supporting device (if necessary for maintaining the position of the vehicle during testing). The apparatus (1) test road simulates environment of the intended use of the vehicle, and typically employs a test drum or a treadmill. Determine the specifications of the (2) test load according to the maximum permissible load or according to the weight of intended users. *NOTE This test method refers to ISO/TR 23482-2 (Robotics – Application of ISO 13482 – Part 2: Application guide), which refers to ISO 7176-8 (Wheelchairs – Part 8: Requirements and test methods for static, impact and fatigue strengths).*	Not such vehicle.	P ☐ F ☐ N/A ☒ N/T ☐

Absatz *Clause*	Anforderungen - Prüfungen / *Requirements - Tests*	Messergebnisse – Bemerkungen/ *Measuring results - Remarks*	Ergebnis *Result*
12.4.5.2	**Apparatus** The apparatus required shall include the following: a) Swept Sinusoidal Vibration test The vehicle is firmly secured to the platform of the vibration machine in its normal operating position. Supports may be used to maintain the normal operating position but care shall be taken to ensure these do not affect the results of the test. The vibration shall be a sinusoidal waveform with logarithmic sweep between 7 Hz and 200 Hz and back to 7Hz traversed in **Footrest/ deck** min. This cycle shall be repeated 12-times for a total of 3 h. From 7 Hz to a peak acceleration of 1 gn is maintained until 18 Hz is reached. The amplitude is then maintained as 0,8 mm (1,6 mm total excursion) and the frequency increased until a peak acceleration of 2 gn occurs (approximately 25 Hz). A peak acceleration of 2 gn is then, maintained until the frequency is increased to 200 Hz. b) Test weight: The test mass shall be applied to the vehicle by a test dummy or where a dummy is not required by an appropriate mass in accordance with the following: — Test dummy A test dummy shall be used when it is necessary to simulate the body mass distribution and kinematics of the user and any accessories (e.g. back pack). Its mass shall simulate the weight of the self-balancing vehicle user where applicable. The total mass shall be the maximum mass of intended user and any accessories (e.g. back pack). — Mass When a test dummy is not required a mass equivalent to the maximum mass of the intended users and any accessories (e.g. back pack) shall be applied. c) Supporting device When the self-balancing vehicle is not able to maintain its position on the test road by itself, a supporting device shall be provided. The supporting device shall hold the self-balancing vehicle either directly or through a suitably connected dummy without affecting the outcome of the test.		
12.5	**Procedure** a) The self-balancing vehicle is positioned on the vibration machine supporting if necessary in accordance with 12.4.5.2 and either, as appropriate, with the test load or test dummy applying the load(s) in accordance to 12.4.5.2. b) Visible damage such as fractures, deformation, jiggling, looseness or disengagement of parts, and changes in self-balancing vehicle function shall be recorded.		
13	**Edges and protrusions**		
13.1	**General** These requirements are intended to address the hazards associated with the users of vehicles falling on projections or rigid components (e.g. handlebars, levers) on vehicle possibly causing internal injury or skin puncture. *NOTE see D.8.*	Informative.	P ☒ F ☐ N/A ☐ N/T ☐
13.2	**Sharp edges** Adequate shape shall be given to avoid puncturing of the body.	No sharp edges was found which present puncturing hazards to the rider's body.	P ☒ F ☐ N/A ☐ N/T ☐
13.3	**Protrusions** Tubes and rigid components in the form of projections which constitute a puncture hazard to the user shall be protected. Screw threads which constitute a puncture/cut hazard shall be limited to a protrusion length of one major diameter of the screw beyond the internally threaded mating part.	Checked satisfactory. There is no exposed screw threads beyonding a length of one major diameter of the screw.	P ☒ F ☐ N/A ☐ N/T ☐

Absatz *Clause*	Anforderungen - Prüfungen / *Requirements - Tests*	Messergebnisse – Bemerkungen/ *Measuring results - Remarks*	Ergebnis *Result*
14	**Moving parts**		
14.1	**Clearance between moving parts** To prevent crushing of fingers the distance separating accessible moving parts from other moving parts or from fixed parts of the vehicle shall, either be less than 5 mm, or greater than 18 mm in any position. This requirement does not apply to the wheel with its support systems, or to the rear brake/braking system, if any, or to brake actuating levers. *NOTE see D.7.*	Checked ok.	P ☒ F ☐ N/A ☐ N/T ☐
14.2	**Guarding of moving parts** Wheels shall be covered to avoid unintentional contact between a foot of the user and the moving wheel.	Rear wheel: covered mudguard; Front wheel: covered mudguard.	P ☒ F ☐ N/A ☐ N/T ☐
14.3	**Folding mechanism**		
14.3.1	**General requirement**		
14.3.1.1	**General** Vehicles that can be folded for storage or transportation shall be fitted with one or more locking mechanism(s). The locking mechanism(s) shall comply with the requirements in 14.3.1.3. The function of any operating or locking device shall not be impaired after being tested in accordance with 14.3.1.2. Folding mechanisms shall be designed so that the vehicles can be locked for use in a simple, stable and safe way and folding shall not damage cables. No locking mechanism shall contact the wheels or tyres during riding, and it shall be impossible to unintentionally loosen or unlock the folding mechanisms during riding.	With one folding mechanism on handlebar-stem. See 14.3.1.3. Not impaired after test in 14.3.1.2. The folding actions are simple, stable and safe. No cables are damaged during folding. No contact between the wheels and locking mechanism.	P ☐ F ☐ N/A ☒ N/T ☐
14.3.1.2	**Incomplete deployment** To avoid hazards due to incomplete deployment, at least one locking device shall engage automatically when the vehicle is unfolded for use. If the locking device is not visible without damaging the vehicle, a second sample may be used.	Complied.	P ☒ F ☐ N/A ☐ N/T ☐

Absatz *Clause*	**Anforderungen - Prüfungen /** *Requirements - Tests*	**Messergebnisse – Bemerkungen/** *Measuring results - Remarks*	**Ergebnis** *Result*
14.3.1.3	**Unintentional release of locking mechanism(s)** To avoid unintentional release, one of the following conditions shall be fulfilled: a) there shall be at least one operating device which fulfils the following: 1) the *operating device* shall require at least two consecutive actions, the second being dependent on the first having been carried out and maintained by the user ; and 2) the *operating device* shall not be activated or damaged in one single action during testing in accordance with 14.3.1.3; Or b) there shall be two separate and independent operating devices which fulfil one of the following: 1) where one operating device is intended to be operated by foot (e.g. by its position, shape, according to the manufacturer's instructions for use.) it shall automatically return to its original status and the locking device shall reengage; or 2) where both operating devices are intended to be operated by hand(s) (e.g. by their position, shape, according to the manufacturer's instructions for use.) they shall both automatically return to their original status and the locking devices shall reengage. When tested in accordance to 14.3.2, the vehicle shall not fold and the *locking device*(s) shall not be released.	Complied with a).	P ☒ F ☐ N/A ☐ N/T ☐
14.3.2	**Test methods**		
14.3.2.1	**Preconditioning** Operate the *locking devices* 200 times.	200 times operation done.	P ☒ F ☐ N/A ☐ N/T ☐
14.3.2.2	**Unintentional release of the locking mechanism by one single action** Place the vehicle fully deployed and ready for use on a horizontal flat surface. Apply a force of 150N or a torque of 2,2 Nm to the *locking device*. This force or torque shall be applied to the *locking device* in the direction most likely to open the *locking device* in one single action. The force or torque shall be applied for a period of 5 s. Folding mechanism shall not be released.	The locking mechanism can not be released with single action by 150N or 2.2N.m.	P ☒ F ☐ N/A ☐ N/T ☐

Absatz *Clause*	**Anforderungen - Prüfungen /** *Requirements - Tests*	**Messergebnisse – Bemerkungen/** *Measuring results - Remarks*	**Ergebnis** *Result*
15	**Adequate stability (see D.10)**		
15.1	**Footrest/ deck** In case the user is standing permanently, each deck shall be equipped with an anti-slide surface with an area of at least 150 cm^2. In case the user is seating normally (not standing) while driving, the footrest shall be anti-slide and shall have a minimum length of 6,5 cm. In case the user is standing momentarily and the vehicle has an integrated seat, the footrest shall be anti-slide and shall have a minimum length of 6,5 cm and a minimum width of 10 cm (see Figure 15).  Key W width l length Figure 15 — example of decks (top view of a mono-wheel)	Size of anti-slide surface: 50.5 x 15.5cm^2 No seating position. Not fitted with an integrated seat.	P ☒ F ☐ N/A ☐ N/T ☐
15.2	**Handlebar adjustment** The handlebar height adjustment system shall be fitted with devices to avoid inadvertent separation or detachment during use.	Checked Ok.	P ☒ F ☐ N/A ☐ N/T ☐
15.3	**Surface**		
15.3.1	**Slippery surface**		
15.3.1.1	**Requirements for wheel adhesion** The wheels shall be constructed from non-slip material. This requirement is considered to be fulfilled if a coefficient of adhesion, μ0, of at least 0,30 is achieved in the test according to 15.3.1.2.	Tested fulfilled, μ_0>0.30.	P ☒ F ☐ N/A ☐ N/T ☐

Absatz *Clause*	**Anforderungen - Prüfungen /** *Requirements - Tests*	**Messergebnisse – Bemerkungen/** *Measuring results - Remarks*	**Ergebnis** *Result*
15.3.1.2	**Wheel adhesion test** Wheel adhesion shall be tested by pulling a clean wheel along a steel plate having a fine brushed and degreased surface of arithmetical mean roughness Ra of 1,5 ìm to 2,0 ìm (see Figure 16). A vertical force F1 of 100 N shall be applied to the wheel which is moved along the steel plate perpendicular to the vehicle's longitudinal axis and perpendicular to the surface brush direction by a horizontal force F2, applied at the height of the wheel's axis. The maximum force shall be recorded. The test shall be repeated 10 times and the mean value of F2 shall be calculated. The test shall be carried out at a speed of approximately 1 mm/s. The coefficient of adhesion shall be calculated according to Formula (1): $\mu_0 = \frac{F_2}{m_E \cdot g + F_1}$ (1) where μ_0 is the coefficient of adhesion; F_1 is the load applied to wheel, in N; F_2 is the adhesive force, in N; m_E is the mass of the wheel, in kg; g is the standard acceleration due to gravity (g = 9,81 m/s$_2$).  Figure 16 — Adhesion of wheels	The test surface meet the requirements. Test load: 100N.	P ☒ F ☐ N/A ☐ N/T ☐
15.3.2	**Irregular surface** When loaded with a 90 kg mass, the dimensions of the tyres of the vehicle shall be: a) For vehicle with aligned wheels or with one front wheel: — the front tyre shall have a minimum diameter of 125 mm and a **minimum width of 25 mm** — the rear tyre shall have a **minimum width of 25 mm** b) For self-balancing vehicle: — the tyre shall have a minimum diameter of 125 mm and **a minimum width of 25 mm** c) For all others vehicles: — the tyre shall have a minimum diameter of 125 mm or **a minimum width of 25 mm**	Non-pneumatic tyres. a) Front wheel: Diameter approx. 233.0mm Width approx. 74.2mm. Rear wheel: Diameter approx. 233.0mm Width approx. 74.2mm. b) not such vehicle. c) not such vehicle.	P ☒ F ☐ N/A ☐ N/T ☐

Absatz *Clause*	Anforderungen - Prüfungen / *Requirements - Tests*	Messergebnisse – Bemerkungen/ *Measuring results - Remarks*	Ergebnis *Result*
15.4	**Braking devices**		
15.4.1	**General** All vehicles shall be equipped with service brake system and, when indicated, a parking brake or parking device as follows: a) Class 1 and 2 single track vehicles (e.g. vehicle with aligned wheels) shall be equipped with at least one braking device; b) Class 1 and 2 multi-track vehicles (e.g. vehicle with unaligned wheels) shall be equipped with a parking device and one of the following: 1) If there are two rear wheels, the vehicle shall be equipped with a braking device on all rear wheels or an independent front and a combined rear wheels brake. The braking device shall be operated by the actuation of a single control or all wheel integrated braking system, 2) If there is one rear wheel, the vehicle shall be equipped with all wheel integrated braking system or with independent front wheel and rear wheel brakes; c) Class 3 and 4 multi-track vehicles shall be equipped with an acceleration controlled braking system. d) Class 3 and 4 single track self-balancing vehicles shall be equipped with a brake. *NOTE Small support wheels (wheels that are not used for normal driving and do not affect the braking) are not considered as a driving or braking wheels.* When a parking brake or parking device is not required, instructions to avoid the vehicle running away when unattended shall be provided in the owner's manual.	a) class 2 single track; Brake system: Front / rear disc brake; Rear elec. Brake; b) not applicable; c) not applicable; d) not applicable. A kick-stand is fitted on the left side of the vehicle.	P ☒ F ☐ N/A ☐ N/T ☐
15.4.2	**Braking performance**		
15.4.2.1	**General requirements** All vehicle shall meet each of the requirements specified in the following paragraphs unless otherwise indicated. A vehicle shall have a configuration that enables a user to actuate the braking device by hand with a lever or by foot while being in a normal driving position and with both hands on the steering control. In case the vehicle is not equipped with a handle bar, the actuation of the braking device shall be performed according to the instructions provided by the manufacturer in accordance with the second sentence of 7.1.1.d). These instructions shall be a part of the user's manual.	See following paragraphs. Checked ok. Not such vehicle.	P ☒ F ☐ N/A ☐ N/T ☐

Absatz *Clause*	**Anforderungen - Prüfungen /** *Requirements - Tests*	**Messergebnisse – Bemerkungen/** *Measuring results - Remarks*	**Ergebnis** *Result*
15.4.2.2	**Hand operated braking system – Strength test** There shall be no failure of the braking system or of any component thereof when tested in accordance with 15.4.3.2.	Tested satisfactory. (tested force<450N, 10 times) The braking actuation forces is less than 200N at 25mm position from end of brake lever.	P ☒ F ☐ N/A ☐ N/T ☐
15.4.2.3	**Dry stop** When the brakes are tested in accordance with the test procedure set out in 15.4.3.4, the following condition shall be met: — the Mean Fully Developed Deceleration (MFDD) shall be: ≥ 1,7 (m/s2). The vehicle speed at the start of braking shall be 90 % of the maximum speed of the vehicle achievable solely by power assistance.	MFDD in Dry: 2.85m/s^2; MFDD in Wet: 2.89m/s^2.	P ☒ F ☐ N/A ☐ N/T ☐
15.4.2.4	**Vehicle behaviour during braking** During the tests (see Clause 15.4.3), the following shall not occur in a way which causes the user to have to use his feet, other than for the application of the brake, to control the vehicle: a) excessive juddering; b) front wheel locking; c) vehicle instability (for example, uncontrollable lifting of the rear wheel); d) user's loss of control or balance; e) excessive side-skidding. *NOTE With certain types of braking systems, it is not possible to entirely avoid some skidding of the rear wheel during braking; this is considered acceptable provided that d) or e) do not occur as a result.*	Such behaviours are not occurred.	P ☒ F ☐ N/A ☐ N/T ☐
15.4.2.5	**Electric failure braking compensation** In the event of an electric braking failure, the vehicle shall be able to brake normally or, shall come to a standstill with a minimum deceleration of 1,25 (+/– 0,25) m/s2 as describe in 15.4.3.5.	The vehicle can brake normally as mechanical disc brakes are fitted.	P ☒ F ☐ N/A ☐ N/T ☐

Absatz *Clause*	Anforderungen - Prüfungen / *Requirements - Tests*	Messergebnisse – Bemerkungen/ *Measuring results - Remarks*	Ergebnis *Result*
15.4.2.6	**Parking device** When required in accordance with 15.4.1, the parking device shall make it possible to maintain the vehicle stationary on up or down gradient of 18 % even in the absence of the user. The user shall be able to achieve this parking action from the riding position. The parking device system shall have a control which is separate from the service braking device controls. The vehicle shall be held in the locked in the parking position by a purely mechanical device. *NOTE Types of parking device are given in Annex G (Table G.1 and G.2).*	It is not required to have a parking device for single track class 2 vehicle in clause 15.4.1. However, a kick stand is fitted for this vehicle.	P ☐ F ☐ N/A ☒ N/T ☐
15.4.3	**Test methods**		
15.4.3.1	**Braking test force applications** a) Actuation by hand The braking actuation forces shall be less than 200 N when measured at 25 mm from the end of the hand lever. b) Actuation by foot After checking that the braking system is correctly adjusted in accordance with the manufacturer's instructions, apply a force to the brake pedal so that the resulting force is vertical to the direction of riding. The vertical force on the brake pedal shall be 700 N, or any other lesser value required to achieve the required performance. *NOTE For vehicles with foot-operated rear wheel brakes, the user's position is allowed to move backwards over the rear wheel.*	a) <200N for proper braking actuation. b) Not applicable. Not applicable.	P ☒ F ☐ N/A ☐ N/T ☐
15.4.3.2	**Brake strength test** The test shall be performed on a fully-assembled vehicle. The brake operating systems shall withstand the applied force. After checking that the braking system is correctly adjusted in accordance with the manufacturer's instruction manual/sheet, apply a force to the brake lever at the point specified in 15.4.3.1. This force shall be 450 N, or any other lesser value required to bring: a) the brake lever into contact with the handlebar grip or, where there is no grip, the handlebar; b) the brake lever extension to the same level as the surface of the handlebar or into contact with the handlebar. Repeat the test 10 times for each brake lever or brake lever extension.	The brake lever contacted the grip with a force < 450N. No brake lever extension fitted. 10 times finished.	P ☒ F ☐ N/A ☐ N/T ☐

Absatz *Clause*	**Anforderungen - Prüfungen /** *Requirements - Tests*	**Messergebnisse – Bemerkungen/** *Measuring results - Remarks*	**Ergebnis** *Result*
15.4.3.3	**Brake performance test conditions (classes 2 and 4)** The mass (*M*t) of the vehicle shall be Technical Permissible Maximum Mass (TPMM). The test track shall be a clean, dry, level surface, with a gradient ≤ 1 %; with good adherence (e.g. asphalt or concrete) and with the test lane of 1,20 m width. The ambient temperature shall be between 5 °C and 35 °C. The wind speed shall be no more than 3 m/s. The user shall be in a position as for normal riding and shall maintain the same position throughout the test. The speed and distance shall be determined using instrumentation having an accuracy of ± 1 % at the prescribed speed for the test. The mean fully developed deceleration (MFDD) may be determined by other methods than the measurement of speed and distance; in this case, the accuracy of the MFDD shall be within ± 3 %. Pneumatic tyres shall be inflated in accordance with the manufacturer's instruction manual/sheet for the vehicle loading condition for the test. Vehicle position and wheel locking: — The vehicle is positioned in the centre of the test lane for the beginning of each stop; — Stops are made without the vehicle wheels passing outside the applicable test lane and without wheel locking. A running-in cycle shall be performed on each brake before the performance tests are carried out. Actuate the brakes for at least three seconds to obtain steady deceleration whilst the vehicle is riding at a speed of approximately 90 % of the maximum speed achievable solely with power assistance. Repeat this operation 10 times. All types of brakes shall be subject to this running-in phase. The following tests shall be carried out to measure the data required to determine MFDD in accordance with 15.4.3.4, Formula (5): a) If the gradient of the track is less than 0,2 %, the following measurements shall be taken in the order presented: 1) five valid measurements in dry conditions; 2) two preparation tests in wet conditions (results not recorded); 3) five consecutive valid measurements in wet conditions.	Max. permissible payload: 120kg. The test track and condition complied with the requirements. Pneumatic tyres properly inflated. Complied with a), 5 measurements in dry and 5 measurements in wet were recorded.	P ☒ F ☐ N/A ☐ N/T ☐

Absatz *Clause*	**Anforderungen - Prüfungen /** *Requirements - Tests*	**Messergebnisse – Bemerkungen/** *Measuring results - Remarks*	**Ergebnis** *Result*
	b) If the gradient of the track is between 0,2 % and 0,5 %, the following measurements shall be taken in the order presented: 1) six consecutive valid measurements in dry conditions, alternating the direction of travel with each test; 2) two preparation tests in wet conditions (results not recorded); 3) six consecutive valid measurements in wet conditions, alternating the direction of travel with each test. c) For each series of five or six consecutive measurements, the test results corresponding to the longest measured stopping distance shall be used in the determination of MFDD in accordance with 15.4.3.4 for the tests of 15.4.3.3 a) 1) and a) 3) or b) 1) and b) 3) as appropriate. A rest period between two successive measurements shall not exceed 3 min.		P ☒ F ☐ N/A ☐ N/T ☐
15.4.3.4	**Stop performance calculation (classes 2 and 4)** For the calculation of MFDD, the following formula shall be used: $MFDD = \frac{V_b^2 - V_e^2}{25,92 \cdot (S_e - S_b)}$ in m/s² (5) where MFDD is the mean fully developed deceleration, in m/s²; V_b is the vehicle speed at 0,8 V_1, in km/h; V_e is the vehicle speed at 0,1 V_1, in km/h; V_1 is the vehicle speed when user actuates the control, in km/h; S_b is the distance travelled between V_1 and V_b, in m; S_e is the distance travelled between V_1 and V_e, in m.	Informative.	P ☒ F ☐ N/A ☐ N/T ☐
15.4.3.5	**Electric braking failure compensation test**		
15.4.3.5.1	**Requirement** The requirement of 15.4.2.5 shall be achieved. In case of electric braking failure, the vehicle shall stop with a smooth deceleration regarding 7.2.	There are mechanical front and rear disc brakes fitted, the vehicle can brake normally when electric braking failure occurrs.	P ☒ F ☐ N/A ☐ N/T ☐
15.4.3.5.2	**Test method for an electrical braking system** This test is not conducted when the vehicle is equipped with a completely mechanical braking system. — Bring the vehicle to V_{max} and interrupt the power from the battery. — Measure the deceleration during the complete stop but excluding the final 0,5 s. — The test track shall be a clean, dry, level surface, with a gradient ≤ 1 %; with good adherence (e.g. asphalt or concrete) and with the test lane of 1,20 m width. — The ambient temperature shall be between 5 °C and 35 °C. The wind speed shall be no more than 3 m/s.		P ☒ F ☐ N/A ☐ N/T ☐

Absatz *Clause*	Anforderungen - Prüfungen / *Requirements - Tests*	Messergebnisse – Bemerkungen/ *Measuring results - Remarks*	Ergebnis *Result*
16	**Presence awareness**		
16.1	**Lighting**		
16.1.1	**Retro-reflectors** Vehicles shall be fitted with front, side and rear retro-reflector according to ISO 6742-2:2015. The rear reflector shall be red in colour. The front reflector shall be white (clear) in colour. All side reflectors shall be of the same colour, either white (clear) or yellow.	The vehicle is fitted with a front light and reflector set, a rear light and reflector set, side reflectors. The reference approval number is as below: Location / Report no. or approval no. Front light: D-032 / ISO 6742-1: Q22-WT0994E Rear light & reflector set Satelite Z107 / ISO 6742-1: 87-ISO6742-726/21-00 ISO 6742-2: 87-ISO6742-727/21-00 Side reflector: KM129 / ISO 6742-2: 87-ISO6742-319/21-00 It is reminded to client that the national regulations applies to the lights and reflectors which has to be fulfilled before on-road use.	P ☒ F ☐ N/A ☐ N/T ☐
16.1.2	**Front and rear lightning** Vehicles of class 2 and 4 shall be fitted with active front and rear lights according to ISO 6742-1:2015 (see D.12). The manufacturer shall indicate in the user's manual how an active front and rear light can be fitted to the vehicles of class 1 and 3. The controls for lighting shall be marked in accordance with Annex F. *NOTE 1 Local regulations can be applicable.* *NOTE 2 see D.14.*	See 16.1.1.	P ☒ F ☐ N/A ☐ N/T ☐

Absatz *Clause*	Anforderungen - Prüfungen / *Requirements - Tests*	Messergebnisse – Bemerkungen/ *Measuring results - Remarks*	Ergebnis *Result*
16.2	**Audible warning to alert persons** An audible device shall be provided to allow a warning to be given to persons in the vicinity of the vehicle. The audible warning device shall be controlled by a command from a device on the handlebar. On a vehicle without a handlebar, a warning device which can be carried by the user of a vehicle (remote control) shall be provided with the vehicle. The vehicle shall only be able to start if the remote control is connected either physically and/or via wireless. The control for the audible warning shall be marked in accordance with Annex F. The device shall comply with ISO 14878:2015 Class II. A remote control shall comply with 17.1.	An electric horn on handlebar. Complied with ISO 14878 Class II. Not by remote control.	P ☒ F ☐ N/A ☐ N/T ☐
17	**System failure and malfunction warning devices**		
17.1	**General** The warning symbols audible signal are given in Annex F. Audible warning devices provided with the vehicle shall be unambiguous and easily perceived. The operator shall be able to check the operation of the audible warning devices at all times. If the vehicle is equipped with a remote control for any audible warning device required by this standard, the vehicle shall only be able to start if the remote control is connected either physically and/or via wireless.	No such device.	P ☐ F ☐ N/A ☒ N/T ☐
17.2	**Audible/ vibrating signaling** Audible devices required by this standard shall comply with ISO 14878:2015 Class II.	No such device.	P ☐ F ☐ N/A ☒ N/T ☐
17.3	**Loss of connection to the warning system** Loss of connection to the warning system shall be relayed by a warning signal (visual, audible, vibrating…) on the vehicle or on the remote control. In a driving condition the loss of connection to the warning device shall result in a speed reduction to 6 km/h for a Class 4 vehicle; the speed reduction shall happen in a safe manner without creating additional hazards and with corresponding audio notification and tilt back of decks on self-balancing vehicles.	No such device.	P ☐ F ☐ N/A ☒ N/T ☐

Absatz *Clause*	Anforderungen - Prüfungen / *Requirements - Tests*	Messergebnisse – Bemerkungen/ *Measuring results - Remarks*	Ergebnis *Result*
18	**Hot surfaces**		
18.1	**Requirements** Hot surfaces of the vehicle (temperatures above 57 °C), except brake systems, which are not in continuous contact with the user shall be protected to prevent inadvertent contact. The seat, handgrips, handgrip levers, footrests and decks are parts that are considered in continuous contact with the user. In no circumstance during the test of 18.2 shall their temperature exceed 43 °C. A durable visible warning shall be fixed as close as possible to the brake if the temperature of the brake system could be above 60 °C (see ISO 7010:2019, symbol W017). The instructions manual shall contain a notice warning of the possible danger of burns if the brakes are touched after a prolonged or severe use. Outer surface temperature of cables and connections that can be reached by the user shall not exceed 57 °C while in use on performance test rig. *NOTE 1 Due to the operational requirements of (disc) brakes, the variability of their working temperatures with the type of use, and the fact they are distant from the normal riding position, no temperature limit is defined for these parts.* *NOTE 2 see D.4.*	 Not exceeding 43°C during the discharging test for the handgrips, levers, and footrest/deck; Tested with positive results. Considered.	P ☒ F ☐ N/A ☐ N/T ☐
18.2	**Test method** To be tested by measurement (tolerance ± 2 °C) only if there are heat producing elements in the direct vicinity of the grips, the footrest or the deck. Put the vehicle on the bench with a fully charged battery. Operate the vehicle under maximum load until 20 % of battery charge remains (maximum warm up). Measure temperature of grips, footrest(s) and deck(s).	Tested accordingly.	P ☒ F ☐ N/A ☐ N/T ☐

Absatz *Clause*	Anforderungen - Prüfungen / *Requirements - Tests*	Messergebnisse – Bemerkungen/ *Measuring results - Remarks*	Ergebnis *Result*
19	**Product information and marking**		
19.1	**General**		
	The following product information should accompany each product. All text shall be printed in the official language or at least one of the official languages of the country of sale. If other languages are included, they shall be easy to distinguish, e.g. by separate presentation. All text shall be clearly legible. Sentences shall be short and of simple construction. The words used shall be uncomplicated and in everyday use. Information and warnings on the vehicle should preferably be provided in the form of readily understandable symbols or pictograms when available.	PDF file submitted. The country of destination is not known at time of testing. Only EN version checked (original instructions). Checked ok. Checked ok.	P ☒ F ☐ N/A ☐ N/T ☐
19.2	**Marking**		
19.2.1	**General** The vehicle shall be legibly, visibly and permanently marked with at least the following:	Durability performance tested.	P ☒ F ☐ N/A ☐ N/T ☐
	— the business name and full address of the manufacturer or, where applicable, his authorized representative, importer or organization responsible for its sale;	The manufacturer information: Jinhua Feimi Intelligent Technology Co., Ltd	
	— designation of the vehicle;	PLEV Class 2	
	— the mandatory marking;	CE marking present	
	— reference to this document, i.e. EN 17128:2020;	EN 17128:2020	
	— designation of series or class with maximum speed (e.g. kick scooter, class 2, 25km/h);	25km/h.	
	— serial or identification number; It is recommended that the identification number is in accordance with ISO 3779.	SN left blank, rules provided.	
	— year of construction, that is the year in which the manufacturing process is completed;	2024.	
	— nominal power expressed in watts (W);	500W	
	— mass of the most usual configuration, in kilograms (kg);	22.3kg	
	— maximum permissible payload, user including luggage.	120kg	
19.2.2	**Durability of marking of the frame or chassis** Rub the marking by hand for 15 s with a piece of cloth soaked in water and again for 15 s with a piece of cloth soaked in petroleum spirit. After the test the marking shall remain easily legible. It shall not be easy to remove any label nor shall any label show any sign of curling. After rubbing the text shall still be clearly legible.	Tested ok.	P ☒ F ☐ N/A ☐ N/T ☐

Absatz *Clause*	Anforderungen - Prüfungen / *Requirements - Tests*	Messergebnisse – Bemerkungen/ *Measuring results - Remarks*	Ergebnis *Result*
19.2.3	**Battery** Information concerning the battery shall comply with existing corresponding standards. Additionally, the following information shall appear on the battery: — the output voltage; — the charging voltage; — the power; — warning on the risks.	Complied with EN 62133-2:2017.	P ☒ F ☐ N/A ☐ N/T ☐
19.2.4	**Tyres** The maximum pressure for inflatable tyres (if present) shall be marked on the tyre or in the instructions for use.	50 PSI	P ☒ F ☐ N/A ☐ N/T ☐
19.3	**Purchase information**		
19.3.1	**General** Information at point of sale could be given on the packaging, on an information sheet in the store or on internet.	Provided by PDF file, given on package for sale. Checked on EN version.	P ☒ F ☐ N/A ☐ N/T ☐
19.3.2	**Information at point of sale** The following information shall be given: — Only use the product in accordance with local regulations; — For which age the vehicle is designed; — Protective helmet is strongly recommended. All product information as required in this standard shall be provided in the official language(s) of the country of sale. Warning sentences shall be written in letters whose upper case shall be at least 2,5 mm in height. The word "WARNING" shall be written in upper case. The word "WARNING!" can be given at the top of a list of warnings: — **"WARNING! Never use the product close to a water source"** — **"WARNING! Stop using the product when damaged"** The information needed to control machinery shall be provided in a form that is unambiguous and easily understood. It shall not be excessive to the extent of overloading the operator. Visual display units or any other interactive means of communication between the operator and the machine shall be easily understood and easy to use (see Annex F).	Information checked ok. Checked ok; 14+ years; Checked ok.	P ☒ F ☐ N/A ☐ N/T ☐

Absatz *Clause*	**Anforderungen - Prüfungen /** *Requirements - Tests*	**Messergebnisse – Bemerkungen/** *Measuring results - Remarks*	**Ergebnis** *Result*
19.3.3	**Information on the packaging** In the case where the product is delivered in a package to the final customer, the following information shall appear on the packaging: — the business name and full address of the manufacturer and, where applicable, his authorized representative,		P ☒ F ☐ N/A ☐ N/T ☐
	— the designation: PLEV,	PLEV	
	— use warnings: **"WARNING! Never use the product out of the spaces authorized by the regulations"**	Checked ok.	
	— the number of this standard followed by the use class, specified as follows: EN 17128 (class xx),	EN 17128 Class 2	
	— for which age the vehicle is designed,	14+;	
	— indication of the maximum weight of the user in accordance with manufacturer recommendation, specified as follows: MAX XXX kg,	120kg	
	— indication of the maximum speed according with manufacturer declaration and within the range of permitted speed corresponding with the declared class, specified as follows: XX km/h.	25km/h	

Absatz *Clause*	**Anforderungen - Prüfungen /** *Requirements - Tests*	**Messergebnisse – Bemerkungen/** *Measuring results - Remarks*	**Ergebnis** *Result*
19.4	**Instructions for use**		
19.4.1	**General** Instructions concerning safe use of the vehicle shall be provided with the vehicle in the form of instruction sheet, instruction manual, leaflet or other similar physical support. These instructions shall include at least the following and shall be headed as follows:	The destinated countries are: Not determined at time of testing Only EN version provided and checked	P ☒ F ☐ N/A ☐ N/T ☐
	"IMPORTANT! Read carefully and keep for future reference"	Checked ok.	
	— The intended use of the vehicle.	Checked ok.	
	— The name or trade mark of the manufacturer, importer or organization responsible for its sale.		
	— Means to identify the product.		
	— The description of the propulsion system technology and its detailed method of operation;		
	— Instructions for initial assembly, folding and erection, when applicable (see Clause 5).		
	— Explanation for light indicators.		
	— Instructions covering all functions of the vehicle, specially driving power assistance start mode (e.g. pushing the vehicle by more than 3 km/h and activating the power assistance mode).		
	— Instructions for operating parking and/or *braking device*(s).		
	— An instruction that the *parking device, if available,* shall be engaged when vehicle is not on use.		
	— For vehicles fitted with load carrying accessory (ies), details of the maximum permissible load.	Not for carrying accessories.	
	— A statement that any load attached to the handlebar will affect the stability of the *vehicle.*		
	— Instructions for routine inspection, maintenance, cleaning and/or washing.		
	A statement that the vehicle shall be used only for one person.		
	— A statement that accessories and any additional items which are not approved by the manufacturer shall not be used.		
	— Instruction concerning safe use of the vehicle together with an indication of: 1) the maximum weight of the user in kg, 2) the maximum and if relevant minimum height of the user, 3) the maximum and/or minimum age of the user as appropriate.		
	— Indication the maximum continuous rated power of the electric motor according with manufacturer declaration, specified as follows: XX W.	500W.	

Absatz *Clause*	**Anforderungen - Prüfungen /** *Requirements - Tests*	**Messergebnisse – Bemerkungen/** *Measuring results - Remarks*	**Ergebnis** *Result*
	— The mandatory marking.		P ☒ F ☐ N/A ☐ N/T ☐
	— The user should check the limits of use in accordance with the local regulations (e.g. use in pedestrian areas, on-road).		
	— Description of the correct methods of use including braking techniques and warning on the extension of braking distances during wet weather.		
	— Description of intended surfaces (flat, clean, dry, level and if possible, distance from other road users).		
	— The use of protective equipment such as: hand/wrist, knee, head and elbow protections. *NOTE 1 see D.5*		
	— The necessary preparations for using the product, for example: the notification that it is necessary to check that the steering system is correctly adjusted, that all connection elements (such as a folding system) are correctly tightened and not broken, and that the brakes and wheels are in good condition.		
	— Obligation to always wear shoes.		
	— Others recommendations such as: special precautions for use at dark; not to touch the brake disc.		
	— The method for adjusting the suspensions if the product has any.		
	— The maximum permissible mass of the user.		
	— Warning aiming to draw the user's attention to any damages related to intensive use and to recommend periodic inspections of the frame, fork and suspension attachments (if any). The warning may be formulated as follows: " WARNING ! As with any mechanical component, a vehicle is subject to high stresses and wear. The various materials and components may react differently to wear or fatigue. If the expected service life for a component has been exceeded, it may break suddenly, therefore risking causing injuries to the user. Cracks, scratches and discoloration in the areas subject to high stresses indicate that the component has exceeded its service life and should be replaced."		
	— Traffic in the city has many obstacles to cross such as curbs or steps. It is recommended to avoid obstacle jumps. It is important to anticipate and adapt your trajectory and speed to those of a pedestrian before crossing these obstacles. It is also recommended to get out of the vehicle when these obstacles become dangerous due to their shape, height or slippage.		

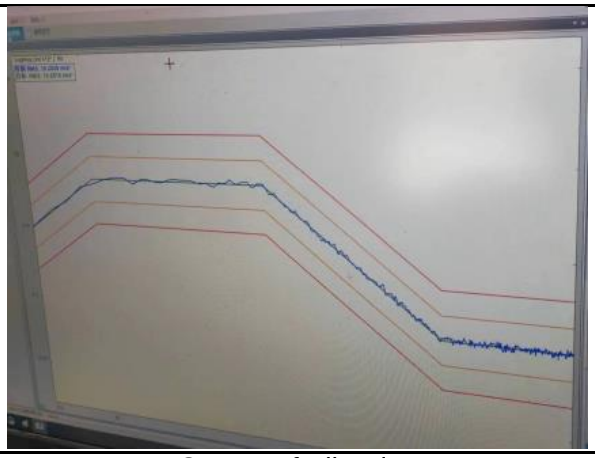
Absatz *Clause*	**Anforderungen - Prüfungen /** *Requirements - Tests*	**Messergebnisse – Bemerkungen/** *Measuring results - Remarks*	**Ergebnis** *Result*
	— An instruction to keep the printed instructions for further reference and to be read carefully before use.		P ☒ F ☐ N/A ☐ N/T ☐
	WARNING Keep plastic covering away from children to avoid suffocation.		
	— For inflatable tyres the maximum pressure shall be marked on the tyre or in the instructions for use.		
	Additionally, the following recommendations shall be given:		
	— Take the time to learn the basics of the practice to avoid any serious accident that can take place in the first months; *NOTE 2 Information on practice and safe use could be given by the manufacturer on a website.*		
	— Get closer to your seller so he can refer you to an appropriate training organization.		
	— Avoid high traffic areas or overcrowded areas.		
	— In any case, anticipate your trajectory and your speed while respecting the code of the road, the code of the sidewalk and the most vulnerable.		
	— Notify your presence when approaching a pedestrian or cyclist when you are not seen or heard.		
	— Cross the protected passages while walking.		
	— In all cases, take care of yourself and others.		
	— Do not divert the use of the vehicle.		
	— This vehicle is not intended for acrobatic use.		
	— Caution, the brake may become hot in use. Do not touch after use.		
	— Regularly check the tightening of the various bolted elements, in particular the wheel axles, the folding system, the steering system and the brake shaft.		
	— Eliminate any sharp edges caused by use.		
	— Do not modify or transform the vehicle, including the steering tube and sleeve, stem, folding mechanism and rear brake.		
	Any other relevant information may be added, at the manufacturer's discretion.		
	Any other valuable information specified by the manufacturer. *NOTE 3 In some countries, specific regulations are applicable regarding e.g.: age, speed limitation, intended use, dedicated areas or transportation of batteries.*		
19.4.2	**Noise emission**		
19.4.2.1	**General** In case of doubt, a-weighted sound pressure levels shall be measured to a maximum 70 dB according to EN ISO 3744:2010, if necessary (see 19.4.2.2).	No doubt.	P ☐ F ☐ N/A ☒ N/T ☐

Absatz *Clause*	Anforderungen - Prüfungen / *Requirements - Tests*	Messergebnisse – Bemerkungen/ *Measuring results - Remarks*	Ergebnis *Result*
19.4.2.2	**Requirements** The following information shall be inserted in the instructions for use: — the A-weighted emission sound pressure level at workstations, where this exceeds 70 dB(A); where this level does not exceed 70 dB(A), this fact shall be indicated, — the peak C-weighted instantaneous sound pressure value at workstations, where this exceeds 63 Pa (130 dB in relation to 20 µPa), — the A-weighted sound power level emitted by the machinery, where the A-weighted emission sound pressure level at workstations exceeds 80 dB(A).	Less than 70dB.	P ☒ F ☐ N/A ☐ N/T ☐
19.4.3	**Battery charging** Information for use shall contain instructions for battery charging, in particular: — recommendations on charging the battery and use of the charger; — procedure for charging the battery; — environmental conditions (e.g. outdoor or indoor charging); — requirement to power-off the vehicle during charging, or into a certain non-operational mode; — appropriate warnings.	For indoor use; Ok.	P ☒ F ☐ N/A ☐ N/T ☐
19.5	**Instructions on servicing and maintenance**		
	It shall be clearly explained that regular maintenance of the vehicle is a factor of safety. These explanations include the following points: — list regarding the maintenance that can be performed by the user himself;	All the required information is included.	P ☒ F ☐ N/A ☐ N/T ☐
	— cleaning recommendations;		
	—description regarding the maintenance and replacement of wear parts; (, wheels, brake pads, cables, etc.);		
	— a note specifying that the self-tightening nuts as well as the other self-tightening fastenings may lose their efficiency and that they may need to be retightened; *NOTE Average value of 20N/m is given unless other value is provided by the manufacturer.*		
	— lubrication recommendations – locations and frequency of lubrication, recommended lubricant;		
	—the method for adjusting the brakes and recommendations concerning the replacement of friction components;		
	— method for adjusting or setting all of the components that would need to be adjusted regularly or after replacement of a part;		
	— recommendation not make any modifications that are not noted in the manufacturer's instructions;		
	— information on where the user can find a qualified maintenance shop for items he cannot do by himself (e.g. replacement of wear parts, electronic components, tightening torques …).		

Absatz *Clause*	Anforderungen - Prüfungen / *Requirements - Tests*	Messergebnisse – Bemerkungen/ *Measuring results - Remarks*	Ergebnis *Result*
Annex A	(informative) **List of significant hazards**		
Annex B	(normative) **Electromagnetic compatibility of vehicle** Details refer to EN 17128.	See EMC test report.	P ☒ F ☐ N/A ☐ N/T ☐
Annex C	(informative) **Example of recommendation for battery charging**		
Annex D	(informative) **Rational**		
Annex E	(informative) **Examples of vehicles**		
Annex F	(normative) **Light, warning device, on-off symbols** Figures F.1 to F.3 gives the symbol to be used for light, warning device and on-off symbols  **Figure F.1 — Power On/Off symbol**  **Figure F.2 — Light symbol**  **Figure F.3 — Electric horn symbol**	Light symbol symbol used.	P ☒ F ☐ N/A ☐ N/T ☐
Annex G	(informative) **Types of parking devices**		

Absatz *Clause*	**Anforderungen - Prüfungen /** *Requirements - Tests*	**Messergebnisse – Bemerkungen/** *Measuring results - Remarks*	**Ergebnis** *Result*

Appendix A-test curves and photo (clause 6.5- Resistance to vibration for electric functions)



Curves of vibration

Test photo

Appendix B -Critical components list

Object/Part No.	**Manufacturer/Trademark**	**Type/Model**	**Technical Data**
CONTROLLER	Wuxi Qishang Technology Co., Ltd.	QS-C48A261EMC-38128	48V 18±1A
DISPLAY	Changzhou TangFeng electronics co., LTD.	TFM13	48V
BATTERY	Zhejiang Anfeituo New Energy Co., Ltd	AFT48V15.6Ah	48V15.6AH
MOTOR	Anhui WEITE MOTOR Technology Co., Ltd.	9inch	500W/48V
BRAKE LEVER	Jinhua Juli vehicle industry Co., LTD	Z01	/
THROTTLE	Jinhua Juli vehicle industry Co., LTD	ZB02	DC5V±0.05V, 2-10mA
BATTERY CHARGER	Shenzhen Fuyuan Electric Power Supply Co., Ltd	FY1505462000	OUTPUT: 54.6V2.0A
FRONT LIGHT	Shenzhen Shenzhou Arrow Electronic Technology Co. Ltd	D-032	
REAR LIGHT	Shanghai Keguang Industrial Co., Ltd.	Z107	Input 12V

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