

Report No.: 58250SC10028201

Test Report

Client Name : ZHEJIANG YOUQI TECHNOLOGY CO., LTD.

Address : No.229, Dongda Street, Shanshi, Daxi town, Wenling
City, Zhejiang Province

Product Name : Electric Scooter

Date : Sept. 26, 2021

**Anbotek (Guangzhou) Compliance Laboratory Limited****Anbotek (Guangzhou) Compliance Laboratory Limited**Address: Room508, Building 2, No.232, Kezhu Road, Science City, Guangzhou Economic & Technology Development Area, Guangzhou,
Guangdong, China

Tel:(86) 20-82575737 Email: service.gz@anbotek.com

TEST REPORT

EN 17128

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)

- Requirements and test methods

Report reference No.: 58250SC10028201

Compiled by: Clearloveq Zheng



Approved by: Terry Tian



Date of issue: Sept. 26, 2021

Contents: 31 pages

Testing laboratory: Anbotek (Guangzhou) Compliance Laboratory Limited

Address: Room.508, Building.2, No.232, Kezhu Road, Science City,
Guangzhou Economic & Technology Development Area,
Guangzhou, Guangdong, China

Testing location: Same as above

Applicant: ZHEJIANG YOUQI TECHNOLOGY CO., LTD.

Address: No.229, Dongda Street, Shanshi, Daxi town, Wenling City, Zhejiang Province

Test specification

Standard: EN 17128:2020

Test procedure: Type test

TRF No.: EN17128A

Type of test object

Description: Electric Scooter

Trademark: UKAYE

Model/type reference: U2, U3, U5

Manufacturer: ZHEJIANG YOUQI TECHNOLOGY CO., LTD.

Rating: Input: 42V $\overline{=}$, 2A

Possible test case verdicts

- test case does not apply to the test object : N (N.A.)
- test object does meet the requirement : P (Pass)
- test object does not meet the requirement : F (Fail)

Testing

Date of receipt of test item : Aug. 18, 2021

Date(s) of performance of test : Aug. 18, 2021 to Aug. 24, 2021

The test results presented in this report relate only to the object tested.

This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

"(see Enclosure #)" refers to additional information appended to the report.

"(see appended table)" refers to a table appended to the report.

Throughout this report a comma / point is used as the decimal separator.

General product information:

If no otherwise specified, all tests were performed on model U2.

are the same except that the product appearance.

The power of EUT supplied by an approved AC/DC charger.

AC/DC charger input: 100-240V~, 50/60Hz, 2.0A Max

AC/DC charger output: 42.0V=, 2.0A, 84W

Battery: 36V=, 7500mAh, 270Wh

Factory:

Name: ZHEJIANG YOUQI TECHNOLOGY CO., LTD.

Address: No.229, Dongda Street, Shanshi, Daxi town, Wenling City, Zhejiang Province

Copy of marking plate**Electric Scooter**

Model: U2

Input: 42V=, 2A

IP54

ZHEJIANG YOUQI TECHNOLOGY CO., LTD.

**No.229, Dongda Street, Shanshi, Daxi town, Wenling
City, Zhejiang Province**



EN 17128			
Clause	Requirement – Test	Result - Remark	Verdict
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. The main classes of vehicle are defined below combined with the main design choices that characterize them		P
5	General safety requirements and protective measures		--
	Vehicle shall comply with the specific requirements of all clauses of this standard. 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.		P
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 $0.7 \pm 0.05J$. 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 60335-1:201 2., Table 3 and after the test the ESA shall show no damage or malfunction that could impair the safe use of the vehicles.		P

EN 17128			
Clause	Requirement – Test	Result - Remark	Verdict
	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.		P
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 voluntarily 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 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.		P
	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.		N
6.3	Electrical cables and connections		--
6.3.1	General		--
	All electrical connectors shall be selected to prevent the corrosion		P
6.3.2	Cable and plugs		--
6.3.2.1	Requirements		--
	After the test there shall be no deterioration of the insulation on either assembly.		P
	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 the temperature of the cables and plugs in use shall be at least 5°C lower than the maximum specified by the manufacturer.		P
6.3.2.2	Test method		--
6.3.3	Wiring		--
	Wiring shall be checked according to the following sequence at an ambient room temperature. a) Wire way shall be smooth and free from sharp edges. b)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		P

EN 17128			
Clause	Requirement – Test	Result - Remark	Verdict
	<p>pass shall have smooth well-rounded surfaces or be provided with bushings.</p> <p>d) shall be effectively prevented from coming into contact with moving parts.</p> <p>Compliance with a) , b) , c) and d) shall be checked by physical inspection.</p> <p>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.</p> <p>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.</p>		
6.3.4	Wiring harness		--
	When a wiring harness is installed, it shall be positioned to avoid a !1 y damage related to contact with moving parts or sharp edges. All connections shall withstand a tensile force of 10 N in any direction.		P
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.		P
6.5	Resistance to vibration for electric functions		--
6.5.1	Requirements		--
	<p>This requirements applies to all PLEV classes 1 to 4.</p> <p>The vehicle shall withstand a vibration test representing the foreseeable use on roads and public areas.</p> <p>When tested according to the method described all electric functions shall be fully maintained.</p> <p>Verification shall be by function test after the vibration test.</p>		P
6.5.2	Test method		--
7	Driving power management		--
7.1	Driving power activation		--
7.1.1	Requirements		--
	<p>Driving power shall only be provided following at least two independent and dissimilar intentional actions by the user. In addition:</p> <p>a) For vehicles of c1 ass 1 or 2 with a partially electrically powered vehicle , the driving power</p>		P

EN 17128			
Clause	Requirement – Test	Result - Remark	Verdict
	<p>shall not be delivered while moving forward at a speed of less than 3 km/h. Verification shall be by the test of 7.12.</p> <p>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 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.</p> <p>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).</p> <p>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.</p> <p>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.</p> <p>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</p> <p>g) In the case where the vehicle is equipped with an electric brake, the driving power management shall be such that braking starts immediately.</p> <p>h) For self-balancing vehicles , the driving power shall ensure that the vehicle speed cannot exceed the maximum speed of the vehicle's class.</p> <p>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) .</p> <p>j) In case of overheating of the driving power management during driving , the following shall</p>		

EN 17128			
Clause	Requirement – Test	Result - Remark	Verdict
	<p>apply for vehicles of class 3 or 4.</p> <p>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.</p> <p>2) In all cases, the vehicle shall be slowed automatically and brought to a safe stop.</p> <p>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.</p> <p>k) In case of insufficient battery following shall apply for vehicles of class 3 or 4:</p> <p>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.</p> <p>2) In all cases , the vehicle shall be slowed automatically and brought to a safe stop.</p> <p>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.</p> <p>l) Acceleration Limitation</p> <p>1) The acceleration of the vehicle shall be smooth without shocks and limited to 2 mjs2 in order to avoid unstable riding conditions.</p>		
7.1.2	Test method		--
7.2	Power failure of control system		--
	<p>For class 1 and class 2 vehicles , in the event of an electrical power failure the vehicle shall be able to brake normally come to a standstill with a deceleration between (1.5 - 2) m/s2.</p> <p>For class 3 and class 4 vehicles , a fault condition in the power control system shall be indicated by a warning signal on the vehicle itself or to the remote control.</p> <p>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.</p>		P
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.		P

EN 17128			
Clause	Requirement – Test	Result - Remark	Verdict
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.		P
8.1.2	Test method		--
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 ($\pm 10\%$) 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.		P
8.2.2	Test method		--
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.		P
9	Electromagnetic compatibility		P
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, 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		P

EN 17128			
Clause	Requirement – Test	Result - Remark	Verdict
	overcurrent and over discharge determined		
10.2	Test method		P
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.		P
11	Energy storage within the vehicle		P
11.1	Requirements		P
	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.		P
11.2	Test method		P
12	Structural integrity		P
12.1	General		P
12.1.1	Numbers and conditioning of samples		P
	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		P

EN 17128			
Clause	Requirement – Test	Result - Remark	Verdict
	<p>carry out all of the tests on the same sample by following the fatigue , then static and then impact test sequence.</p> <p>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.</p> <p>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.</p> <p>For all strength tests , samples shall be fully assembled.</p>		
12.1.2	Test condition tolerances		P
12.1.3	Crack detection		P
	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.		P
12.2	Static load test		P
12.2.1	Deck/frame		P
12.2.1.1	Requirement		P
	When tested according to the method described in sub clauses 12.2.1.2. 12.2.1.3 or 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.		P
12.2.1.2	Test method -2-wheeled single track vehicle		P
12.2.1.3	Test method -3-wheeled vehicle		P
12.2.1.4	Test method -self-balancing vehicle		P
12.2.2	Handle bar and steering column		P
12.2.2.1	Bending test		P
12.2.2.1.1	Requirements		P
	When tested according to the method described in 1 2.2.2.1.2 , there shall be no cracks or fractures , or deterioration of the operation of the handlebar or steering column.		P
12.2.2.1.2	Test methods		P
12.2.2.2	Vertica loading test		P

EN 17128			
Clause	Requirement – Test	Result - Remark	Verdict
12.2.2.2 .1	Requirements		P
	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.		P
12.2.2.2.2	Test method		P
12.2.2.3	Torque test		P
12.2.2.3.1	Requirement		P
	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 .		P
12.2.2.3.2	Test method		P
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 1 2.2.2.4.2 , the grips or plugs shall withstand a dismantling force of 70 N.		P
12.2.2.4.2	Test method		--
12.2.2.5	Telescopic handbar(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 insert ion depth defined in a)		P
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		N

EN 17128			
Clause	Requirement – Test	Result - Remark	Verdict
	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 locking of the folding system, if any, shall be checked when the scooter is unfolded. If applicable, the folding mechanisms shall remain locked.		
12.3.2	Test method for vehicle of class 2		--
12.3.3	Requirements for class 4		--
	When tested according to the method described in 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.		N
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 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.		P
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, rep lace 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 .		P

EN 17128			
Clause	Requirement – Test	Result - Remark	Verdict
	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 0 1' links to vary the strength of the scooter against the ground-contact forces or to modify the attitude of the these adjustable components to ensure maximum forces in the frame.		
12.4.2	Requirement		--
	When tested according to the method described in 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 locking of the folding system , if any , shall be checked when the scooter is unfolded.		N
12.4.3	Test method for 2-wheeled single track vehicle		--
12.4.4	Test method for 3-wheeled single track vehicle		--
12.4.5	Test method for a self-balancing vehicle		--
12 .5	Procedure		--
	a) The self-balancing vehicle is positioned on the vibration machine supporting if necessary in accordance with either , as appropriate , with the test load or test dummy applying the load(s) in accordance to b) Visible damage such as fractures , deformation , jiggling , looseness or disengagement of parts , and changes in self-balancing vehicle function shall be recorded.		P
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.		P
13. 2	Sharp edges		--

EN 17128			
Clause	Requirement – Test	Result - Remark	Verdict
13.3	Protrusions		--
	<p>Tubes and rigid components in the form of projections which constitute a puncture hazard to the user shall be protected .</p> <p>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.</p>		P
14	Moving parts		--
14.1	Clearance between moving parts		--
	<p>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.</p> <p>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.</p>		P
14.2	Guarding of moving parts		--
	Wheels shall be covered to avoid unintentional contact between a foot of the user and the moving wheel.		P
14.3	Folding mechanism		--
14.3.1	General requirements		--
14.3.1.1	General		--
	<p>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</p> <p>The function of any operating or locking device shall not be impaired after being tested in accordance with 14.3.1.2.</p> <p>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.</p>		P
14.3.1.2	Incomplete deployment		--
	To avoid hazards due to incomplete deployment,		P

EN 17128			
Clause	Requirement – Test	Result - Remark	Verdict
	at least one locking device shall engage automatically when the vehicle is unfolded for use. If the locking device is not visible damaging the vehicle , a second sample may be used.		
14.3.1.3	Unintentional release of locking mechanism(s)		--
	<p>To avoid unintentional release , one of the following conditions shall be fulfilled:</p> <p>a) there shall be at least one operating device which fulfils the following:</p> <p>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</p> <p>2) the operating device shall not be activated or damaged in one single action during testing in accordance with 14.3.1.3; or</p> <p>b) there shall be two separate and independent operating devices which fulfil one of the following:</p> <p>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</p> <p>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 .</p> <p>When tested in accordance to the vehicle shall not fold and the locking device(s) shall not be released.</p>		P
14.3.2	Test methods		--
15	Adequate stability		--
15.1	Footrest/ deck		--
	<p>In case the user is standing permanently , each deck shall be equipped with an anti-slide surface with an area of at least 150 cm² .</p> <p>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.</p> <p>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</p>		P
15.2	Handlebar adjustment		--

EN 17128			
Clause	Requirement – Test	Result - Remark	Verdict
	The handlebar height adjustment system shall be fitted with devices to avoid inadvertent separation or detachment during use.		P
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 coefficient of adhesion, μ_0 , of at least 0.3 is achieved in the test according to 15.1.3.2.		P
15.3.1.2	Wheel adhesion test		--
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		P
15.4	Braking devices		--
	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; 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		P

EN 17128			
Clause	Requirement – Test	Result - Remark	Verdict
	<p>or with independent front wheel and rear wheel brakes;</p> <p>c) Class 3 and 4 multi-track vehicles shall be equipped with an acceleration controlled braking system.</p> <p>d) Class 3 and 4 single track self-balancing vehicles shall be equipped with a brake .</p> <p>When a parking brake or parking device is not required , instructions to avoid the vehicle when unattended shall be provided in the owner's manual.</p>		
15.4.2	Braking performance		--
15.4.2.1	General requirements		--
	<p>All vehicle shall meet each of the requirements specified in the following paragraphs unless otherwise indicated.</p> <p>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.</p> <p>In case the vehicle is not equipped with a handbar , 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.</p>		P
15.4.2.2	Hand operated braking system - Strength test		P
15.4.2.3	Dry stop		--
	<p>When the brakes are tested in accordance with the test procedure set out, the following condition shall be met:</p> <p>- the Mean Fully Developed Deceleration : $\geq 1.7(m/s^2)$.</p> <p>The vehicle speed at the start of braking shall be 90 % of the maximum speed of the vehicle achievable solely by power assistance.</p>		P
15.4.2.4	Vehicle behaviour during braking		--
	<p>During the tests, 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:</p> <p>a) excessive juddering;</p> <p>b) front wheel locking;</p> <p>c) vehicle instability</p> <p>d) user 's loss of control or balance;</p>		P

EN 17128			
Clause	Requirement – Test	Result - Remark	Verdict
	e) excessive side-skid		
15.4.2.5	Electric failure braking compensation		--
	In the event of an electric braking failure, the vehicle shall be able to brake normally and come to a standstill with a minimum deceleration of 1.25 m/s ² as described.		P
15.4.2.6	Parking device		--
	When required in accordance with the parking device shall make it possible to maintain in 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.		P
15.4.3	Test methods		--
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.		P
16.1.2	Front and rear lighting		--
	Vehicles of class 2 and 4 shall be fitted with active front and rear lights according to ISO 6742-1:2015 (see 0.12). 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 E		P
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.		P

EN 17128			
Clause	Requirement – Test	Result - Remark	Verdict
	<p>The audible warning device shall be controlled by a command from a device on the handlebar.</p> <p>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.</p> <p>The control for the audible warning shall be marked in accordance with Annex F</p> <p>The device shall comply with 1 SO 14878:2015 Class 1 1.</p> <p>A remote control shall comply with 17.1 .</p>		
17	System failure and malfunction warning devices		--
17.1	General		--
	<p>The warning symbols audible signal are given in Annex F.</p> <p>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.</p> <p>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.</p>		P
17.2	Audible vibrating signalling		--
	Audible devices required by this standard shall comply with ISO 14878:2015 Class 11.		P
17.3	Loss of connection to the warning system		--
	<p>Loss of connection to the warning system shall be relayed by a warning signal on the vehicle or on the remote control.</p> <p>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 balancing vehicles.</p>		N
18	Hot surfaces		--
18.1	Requirements		--
	Hot surfaces of the vehicle , except brake		P

EN 17128			
Clause	Requirement – Test	Result - Remark	Verdict
	<p>systems , which are not in continuous contact with the user shall be protected to prevent inadvertent contact .</p> <p>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.</p>		
	<p>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.</p> <p>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.</p> <p>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.</p>		P
18.2	Test method		--
19	Product information and marking		--
19.1	General		--
	<p>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.</p>		P
19.2	Marking		--
19.2.1	General		--
	<p>The vehicle shall be legibly, visibly and permanently marked with at least the following</p> <ul style="list-style-type: none"> -the business name and full address of the manufacturer or, where applicable, his authorized representative, importer or organization responsible for its sale: - designation of the vehicle; 		P

EN 17128			
Clause	Requirement – Test	Result - Remark	Verdict
	-the mandatory marking; -reference to this document. ie. EN 17128:2020 -designation of series or class with maximum speed, kick scooter, class 2, 25km/h; -serial or identification number; It is recommended that the identification number is in accordance with ISO 3779. -year of construction, that is the year in which the manufacturing process is completed. -nominal power expressed in watts (W): -mass of the most usual configuration, in kilograms (kg): - maximum permissible payload, user including luggage		
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		P
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,		P
19.2.4	Tyres		--
	The maximum pressure for inflatable tyres (if present) shall be marked on the tyre or in the instructions for use.19.3 Purchase information		P
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.		P
19.3.2	Information at point of sale		--
	The following information shall be given: -Only use the product in accordance with local regulations:		P

EN 17128			
Clause	Requirement – Test	Result - Remark	Verdict
	<p>- For which age the vehicle is designed</p> <p>- Protective helmet is strongly recommended .</p> <p>All product information as required in this standard shall be provided in the official language(s) of the country of sale.</p> <p>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:</p> <p>"WARNING! Never use the product close to a water source"</p> <p>"WARNING! Stop using the product when damaged"</p> <p>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.</p> <p>Visual display units or any other interactive means of communication between the operator and the machine shall be easily understood and easy to use</p>		
19.3.3	Information on the packaging		--
	<p>In the case where the product is delivered in a package to the final following information shall appear on the packaging:</p> <ul style="list-style-type: none"> -the business name and full address of the manufacturer and , where applicable , his authorized representative , -the designation: PLEV -use warnings: "WARNING! Never use the product out of the spaces authorized by the regulation " -the number of this standard followed by the use class, -for which age the vehicle is designed , -indication of the maximum weight of the user in accordance with manufacturer recommendation -indication of the maximum speed according with manufacturer declaration and within the range of permitted speed corresponding with the declared class 		P
19.4	Instructions for use		--
19.4.1	General		--
	<p>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.</p> <p>These instructions shall include at least the following and shall be headed as follows:</p>		P

EN 17128			
Clause	Requirement – Test	Result - Remark	Verdict
	<p>"IMPORTANT! Read carefully and keep for future reference"</p> <ul style="list-style-type: none"> -The intended use of the vehicle. -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 -Explanation for light indicators. -Instructions covering all functions of the vehicle , specially driving power assistance start 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. 		P
	<ul style="list-style-type: none"> -For vehicles fitted with load carrying accessory (ies) , details of the maximum permissible load. -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: <ol style="list-style-type: none"> 1) the maximum weight of the user in kg , 2) the maximum and if relevant minimum height of the 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 -The mandatory marking. 		--
	<ul style="list-style-type: none"> -The user should check the limits of use in accordance with the local regulations 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 -The use of protective equipment such as: hand/wrist , knee , head and elbow protections. -The necessary preparations for using the 		P

EN 17128			
Clause	Requirement – Test	Result - Remark	Verdict
	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.		
	<ul style="list-style-type: none"> -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 material and components may react differently to wear or fatigue. If the expected service life for a component has been exceeded , it may break 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 li fe and should be replaced ." 		P
	<ul style="list-style-type: none"> -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. -An instruction to keep the printed instructions for further reference and to be read carefully before use. -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. 		P
	<p>Additionally , the following recommendations shall be given:</p> <ul style="list-style-type: none"> -Take the time to learn the basics of the practice to avoid any serious accident that can take place in the first months; -Get closer to your seller so he can refer you to an appropriate training organization. 		P

EN 17128			
Clause	Requirement – Test	Result - Remark	Verdict
	<ul style="list-style-type: none"> -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.		P
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		P
19.4.2.2	Requirements		--
	<p>The following information shall be inserted in the instructions for use:</p> <ul style="list-style-type: none"> --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 --the A-weighted sound power level emitted by the machinery , where the A-weighted emission sound pressure level at workstations exceeds 80 dB(A). 		P
19.4.3	Charging		--
	Information for use shall contain instructions for		P

EN 17128			
Clause	Requirement – Test	Result - Remark	Verdict
	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.		
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; --cleaning recommendations; --description regarding the maintenance and replacement of wear parts; --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; --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		P

PHOTO DOCUMENTATION

Photo 1



Photo 2



PHOTO DOCUMENTATION

Photo 3



Photo 4



PHOTO DOCUMENTATION

Photo 5



Photo 6



PHOTO DOCUMENTATION

Photo 7



Photo 8



-----End of Report-----