TEST REPORT
EN 12184
Electrically powered wheelchairs, scooters and their chargers — Requirements and test methods

Report reference No. ..... :	SHES240300570001
Date of issue ..... :	2024-10-24
Test by（name + signature）..... :	Natalie Bao Natalie Bao
Approved by (name + signature) :	Jason Gong Jason Gong
Testing laboratory ..... :	SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.
Address ..... :	No. 588 West Jindu Rd, Xinqiao Town, Songjiang District 201612 Shanghai China.
Applicant ..... :	Kunshan Aoshida Electric Technology Co., Ltd.
Address ..... :	No.6 Huanlou Road, Development Zone, Kunshan City, Jiangsu, China.
Test Specification:	
Standard ..... :	EN 12184:2022
Test procedure..... :	Test Report
Non-standard test method..... :	N/A
Test item description ..... :	Power wheelchair
Trademark ..... :	FreedomChair
Manufacturer..... :	Kunshan Aoshida Electric Technology Co., Ltd. No.6 Huanlou Road, Development Zone, Kunshan City, Jiangsu, China.
Model/type reference..... :	A12
Series/Batch No. ..... :	A122403014001
Type Class& Maximum Speed ..... :	Class B, 7 km/h
Maximum Occupant mass ..... :	160 kg
Power Rating..... :	Rechargeable Li-ion battery (Model: DJ-2410): 24 VDC, 10 Ah x3, 240 Wh x3 DC Motor (Model: MT50I): 250 W x 2 Battery charger (Model: ZB2403ML) Input: 100-240 VAC, 50/60 Hz, 1.8 A Output: 24 Vdc, 3 A

List of Attachments (including a total number of pages in each attachment):

Attachment 1: Technical documentation for 10 pages.

Attachment 2: Photos documentation for 10 pages.

Summary of testing

All of test listed below have been conducted and met the requirements specified in the standard.

Tests performed (name of test and test clause):

8.1.2 Ability to climb rated slope
8.1.3 Ground unevenness
8.1.4 Maximum downhill speed
8.1.5 Dynamic stability
8.1.6 Obstacle climbing and descending
8.1.7 Static stability
8.1.8 Maximum speed
8.1.9 Distance range
8.2 Static, impact and fatigue strength
8.4 Climatic performance
9.2 Component mass
9.5 Resistance to ignition
10.1.2 Determination of brake operating forces
10.2.2.1 Determination of the effectiveness of running brakes
10.2.2.2 Determination of effectiveness of parking brakes
10.2.2.3 Protrusion of parts of the parking brakes
10.2.2.4 Fatigue strength of parking brakes
10.3 Freewheel device
11.1 Operations intended to be carried out by the occupant and/or assistant
11.2 Operations intended for operation by the occupant
11.3 Operations intended for operation by an assistant
11.4 Assistant control unit, push handles and handgrips
11.5 Operating forces
12.2 Circuit protection
12.3 Battery chargers
12.8 Switching off while driving

Testing location:

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

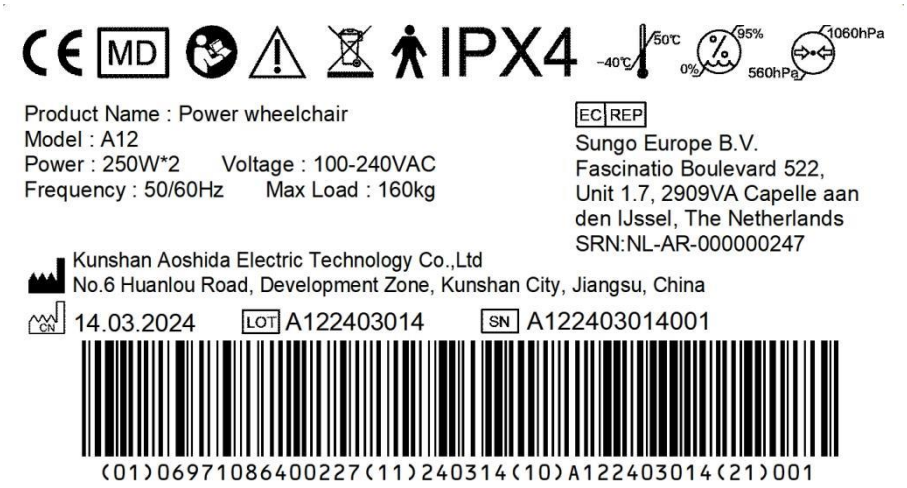
No. 588 West Jindu Rd, Xinqiao, Songjiang 201612 Shanghai CHINA.

Summary of compliance with National Differences (List of countries addressed):

N/A

Copy of marking plate
The artwork below may be only a draft.

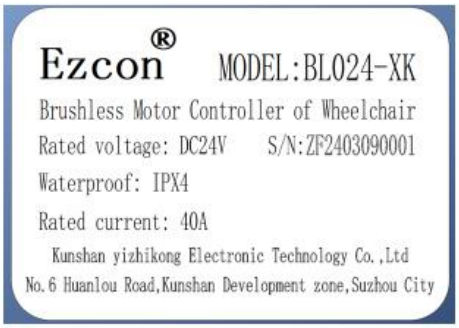
Electric wheelchair:



Battery charger:

Battery:

Controller:



Motor:

GENERAL INFORMATION	
Test item particulars	
Intended environment of use .....:	Indoor & Outdoor
Type of battery charger .....:	Off board
Accessories and detachable parts included .....:	Joystick, Battery charger, Safety belt, Seat cushion, Battery, User manual.
Other options include ..... :	N/A
Possible test case verdicts:	
- test case does not apply to the test object.....:	N/A
- test object does meet the requirement .....:	P (Pass)
- test object was not evaluated for the requirement:	N/E
- test object does not meet the requirement.....:	F (Fail)
Testing	
Date of receipt of test item .....:	2024-04-01
Date (s) of performance of tests.....:	2024-04-07 to 2024-05-15
General remarks: 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.	
Manufacturer's Declaration:	
The application for obtaining a Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided :	☐ Yes ☒ Not applicable
Name and address of factory (ies)……:	Kunshan Aoshida Electric Technology Co., Ltd. No.6 Huanlou Road, Development Zone, Kunshan City, Jiangsu, China.

General product information:

The Electric wheelchair is a motor driven, indoor and outdoor transportation vehicle with the intended use to provide mobility to a disabled or elderly person limited to a seated position. The wheelchair has two front wheels, two rear wheels, two electric motors with electromagnetic brake, and three rechargeable Lithium-ion batteries with an off-board charger. The movement of the wheelchair is controlled by the joystick. The device is installed with an electromagnetic brake that will engage automatically when the wheelchair is not in use and the brake cannot be used manually. The wheelchair only can be operated on the flat road for both outdoor and indoor use, hospital, senior center, family or similar circumstances use only.

The risk analysis has been carried out in accordance with ISO 14971: 2019, and relevant documents and records are checked, Risk Management Report Doc#: CE-MDR-TCF003-01, Rev. A/0. The electrical control system of wheelchair has conformed and tested with appliance according to the requirements of ISO 7176-14:2022 (Report No.: SHES240300570014).

All tests in this report were carried out under 22 °C to 25 °C as ambient temperature separately. The size of the dummy (160 kg) used is according to ISO 7176-11: 2012 and fit the dummy in the wheelchair as specified in ISO 7176-22: 2014 as required by manufacturer. Also, supplementary weights (98 kg) and human test occupant (62 kg) are used. All tests conducted based the speed setup at maximum mode otherwise specified.

Regarding to electromagnetic compatibility including wireless compliance test of wheelchair and battery charger were evaluated according to ISO 7176-21 test report (Report No.: SHEM240300142801).

Condition of acceptability:

The test sample is provided by manufacturer, and it has met all of the applicable requirements in this standard other than following clauses are not evaluated in this report:
6.3 Clinical evaluation and investigation
6.6 Biocompatibility and toxicity
6.7 Contaminants and residues
6.8 Infection and microbiological contamination
12.9 Software

EN 12184: 2022			
Clause	Requirement + Test	Result – Remark	Verdict
5.	**TYPE CLASSES**		P
	Wheelchairs is classified in one or more of the following three classes, dependent upon their intended use:		P
	— Class A: wheelchairs intended for driving on flat horizontal surfaces and gentle slopes;		N/A
	— Class B: wheelchairs intended for driving on moderately uneven surfaces and on moderate slopes, in addition to the intended use described for Class A;		P
	— Class C: wheelchairs intended for driving on uneven terrain and on steeper slopes, in addition to the intended uses described for Classes A and B.		N/A
	Requirements specific to each class are given in Table 3. NOTE 1 Scooters are included within the classes above. NOTE 2 Some requirements and exceptions specific to Class A are given in the text.		P
6	**GENERAL REQUIREMENTS**		P
6.1	**Risk management**		P
	A risk management process is performed in accordance with EN ISO 14971:20191. For conformity with this document, all elements of the risk management process specified in EN ISO 14971:2019 is applied except: — the planning for, and execution of, production and post-production monitoring (EN ISO 14971:2019, 4.1 fourth indent, 4.4 item g), and Clause 10); and — periodic reviews of the suitability of the risk management process (EN ISO 14971:2019, 4.2 third paragraph).	See Risk Management Report File No.: CE-MDR-TCF003-01, Rev. A/0	P
6.2	**Intended performance and technical documentation**		P
	a) The wheelchair has sufficient strength and durability to sustain all loads expected during intended use. This is confirmed by using, where appropriate, references to relevant clinical and scientific literature, strength and/or durability calculations, appropriate test standards and their test results, in addition to the requirements given in this document.		P
	b) The intended performance of the wheelchair, including, where appropriate, strength, durability and tipping stability, and it is described in technical documentation which sets out its functional characteristics, its application(s) and conditions of use.		P

EN 12184: 2022			
Clause	Requirement + Test	Result – Remark	Verdict
	c) The technical documentation including, where appropriate, references to relevant clinical and scientific literature, any strength and/or life calculations, appropriate test standards and their test results.		P
6.3	**Clinical evaluation and investigation**		N/E
	A clinical evaluation is conducted for the wheelchair. If, as part of the product conformity assessment, the clinical evaluation requires a clinical investigation, the clinical investigation is conform to the requirements of EN ISO 14155:2020. A clinical evaluation is always be conducted before performing a clinical investigation.		N/E
6.4	**Wheelchairs that can be dismantled**		P
	If it is intended that the wheelchair can be dismantled for storage or transportation, it is not possible to reassemble the wheelchair in a manner that presents a hazard.		P
6.5	**Single-use fasteners**		P
	If it is intended that the wheelchair can be dismantled for storage or transportation, the fasteners which are loosened or removed to allow this dismantling is not single-use fasteners.		P
6.6	**Biocompatibility and toxicity**		N/E
	Materials which come into contact with the human body was evaluated for biocompatibility in accordance with EN ISO 10993-1:2020 as part of the risk management process. The evaluation take into account the intended use, including, where appropriate, contact with the occupant, an assistant, those involved in care of the occupant, and those involved in transportation and storage of the wheelchair. Wheelchairs is designed and manufactured to minimize the risks posed by substances leaking from them. Special attention is given to substances which are carcinogenic, mutagenic or toxic to reproduction and other substances of very high concern (SVHCs). The evaluation should follow the guidance given in Annex F.		N/E
6.7	**Contaminants and residues**		N/E
6.7.1	General		N/E
	The requirements given in 6.7.2 apply to substances which are an integral part of the wheelchair or are necessary for its function, such as oil and grease. The requirements do not apply to body fluids which the wheelchair is intended to collect (e.g. as a stoma-care product).		N/E

EN 12184: 2022			
Clause	Requirement + Test	Result – Remark	Verdict
6.7.2	Substances which can leak in intended use or in a fault condition		N/E
	Where a substance can leak from the wheelchair in intended use or in a fault condition:		N/E
	a) the substance is assessed for biocompatibility in accordance with EN ISO 10993-1:2020 as part of the risk management process, and the assessment has considered intended use, including, where appropriate, contact with the occupant, an assistant, those involved in care of the occupant, and those involved in transportation and storage of the wheelchair; or		N/E
	b) the wheelchair have means of protection that minimizes the possibility of the substance becoming a biological hazard.		N/E
6.8	**Infection and microbiological contamination**		N/E
6.8.1	Cleaning and disinfection		N/E
	If any parts of the wheelchair are intended to be cleaned, the method and suitable materials for cleaning is described in the instructions for use. If any parts of the wheelchair are intended to be disinfected, the method and suitable materials for disinfection is described in the instructions for use. If any parts of the wheelchair are intended to be cleaned by automatic washing systems or hand-held jet stream or steam washing, the details of the procedure, such as temperature, pressure, flow and pH value of cleaning/rinsing solution, is described in the instructions for use. Where practicable, the wheelchair is labelled with appropriate symbols to represent the method of cleaning.		N/E
6.8.2	Animal tissue		N/E
	Where the wheelchair has been manufactured utilizing tissues of animal origin or their derivatives, the process specified in EN ISO 22442-1:2020 is followed as part of the risk management process.		N/E
6.9	**Overflow, spillage, leakage, and ingress of liquids**		P
6.9.1	Overflow		N/A
6.9.1.1	Requirements		N/A
	If the wheelchair incorporates a reservoir or liquid storage chamber that can be overfilled or can overflow in intended use, liquid overflowing from the reservoir or chamber not wet electrical insulation or live parts which are liable to be adversely affected by such a liquid, nor a hazard be created. Unless indicated by a marking or by the instructions for use, no hazard be created if the wheelchair is tilted through an angle 15° greater than the maximum inclination that can occur during intended use.	The wheelchair is not incorporating a reservoir or liquid storage chamber.	N/A
6.9.1.2	Test method		N/A

EN 12184: 2022			
Clause	Requirement + Test	Result – Remark	Verdict
	Fill the reservoir to the maximum level specified by the manufacturer and, if possible, add further liquid equal to 15^{+1}_{0} % of the capacity of the reservoir or until the reservoir is full, whichever is the lesser quantity. Tilt the wheelchair through an angle of (a+15^{+1}_{0})° to the horizontal in each direction, where a is the maximum slope for use of parking brakes. If necessary, refill the reservoir between tests. Inspect the wheelchair, including any electrical insulation and any uninsulated live parts, to determine whether the requirements have been met. For electrical insulation, in case of doubt, subject the wheelchair to the dielectric strength test specified in EN 60601-1:20062.		N/A
6.9.2	Spillage		N/A
6.9.2.1	Requirements		N/A
	Wheelchairs requiring the handling of liquids in intended use is so constructed that spillage does not wet parts that creates a hazard.	Not intended use to handling of liquids.	N/A
6.9.2.2	Test method		N/A
	Position the wheelchair on the horizontal test plane. Pour 200^{+5}_{0} ml of water steadily on an arbitrary point on the seat. After the test, the wheelchair is function as specified by the manufacturer.		N/A
6.9.3	Leakage		N/A
	Wheelchairs is so constructed that liquid which can escape in single fault condition does not create a hazard.	No liquid constructed.	N/A
6.9.4	Ingress of liquids		P
6.9.4.1	Requirements		P
	If liquid can enter an enclosure unintentionally, either there is a means for the liquid to escape from the enclosure, or the liquid not create a hazard. NOTE 1 See B.2.14. NOTE 2 ISO 7176-9:2009 also covers ingress of liquids into enclosures. See 8.4.	IP X4 Complied. There is no such enclosure that will prevent the liquid from escape form the enclosure.	P
6.9.4.2	Test method		P
	Test whether the liquid can escape from an enclosure by adding liquid and then tilting the wheelchair 10° in each direction. If any liquid remains in the enclosure, test the wheelchair to determine whether it is still functional, and determine whether the liquid can create a hazard.		P
6.10	**Safety of moving parts**		P
6.10.1	Squeezing		P

EN 12184: 2022			
Clause	Requirement + Test	Result – Remark	Verdict
	Unless the intended purpose of part of the wheelchair is to grip, cut, squeeze or provide a similar function, or if the intended use cannot be achieved without a risk of squeezing:		P
	a) any moving parts that constitute a hazard is provided with guards that cannot be removed without the use of a tool; or	No such moving parts.	N/A
	b) the gap between exposed parts of the wheelchair that move relative to each other is maintained throughout the range of movement at less than the relevant minimum value or more than the relevant maximum value specified in Table 1; or	No such parts that move relative to each other.	N/A
	c) if cords (ropes), chains or drive belts are used, either they are confined so that they cannot run off or jump out of their guiding devices, or a hazardous situation is prevented by other means; mechanical means used for this purpose is not removable without the use of a tool; or		P
	d) the wheelchair incorporates a control device which enables the movement when it is operated and stops the movement when it is released (e.g. a spring-loaded device that returns to the stop position when released).		P
	e) the wheelchair incorporates a means to detect that a person is in danger of being trapped and to prevent injury automatically (e.g. by stopping the movement).	No such trapping hazards.	N/A
	For moving parts that can cause squeezing, manufacturers have take into consideration the part or parts of the body that are at risk. It is necessary to specify the characteristics of the persons involved in the intended use, so that the appropriate safe distances can be applied.		P
6.10.2	Mechanical wear		P
	Parts subject to mechanical wear likely to create a hazard is accessible for inspection.		P
6.10.3	Emergency stopping functions		P
	The requirements specified in 12.6 apply to moving parts of the body support system if there is a risk that the occupant can be squeezed or that a single fault can create a hazard.	By switch off.	P
6.11	Prevention of traps for parts of the human body		N/A
6.11.1	Holes and clearances		N/A

EN 12184: 2022			
Clause	Requirement + Test	Result – Remark	Verdict
	Holes in, and clearances between stationary parts that are accessible to the occupant and/or assistant during the intended use of the wheelchair is as specified in Table 2. If the intended purpose of the wheelchair cannot be met without a hazard caused by the size of holes and the clearance between stationary parts, a warning and instructions on how to control the risk is provided in the instructions for use. For stationary parts that can cause a trap, manufacturers have take into consideration the parts of the body that are at risk. It is necessary to specify the characteristics of the persons involved in the intended use, so that the appropriate safe distances can be applied. The design of parts that confine a hole or clearance take into consideration the forces that can be applied in normal use. The lower limits specified in Table 2 do not apply for holes with the shape of a keyhole, or for V-shaped openings. When inspecting the wheelchair for traps for body parts any flexibility and/or elasticity of adjacent parts is taken into account.	No such holes and clearances	N/A
6.11.2	V-shaped openings		N/A
	The risk of entrapment in V-shaped openings is addressed by the risk management process	No such openings.	N/A
6.12	Folding and adjusting mechanisms		P
6.12.1	General		P
	Folding and adjusting mechanisms can present a hazard if parts of the body can enter a gap between parts and be trapped when the gap is closed. If the wheelchair incorporates folding and/or adjusting mechanisms it is conform to 6.12.2 and 6.12.3.		P
6.12.2	Locking mechanisms		P
	Folding and adjusting mechanisms is capable of being securely locked when the wheelchair is in a working configuration. They also be capable of being securely locked when folded if they constitute a risk. The wheelchair fold in a safe manner.		P
6.12.3	Guards		P
	Either: a) the wheelchair is incorporate means to protect the occupant from trap and/or squeeze hazards; or		P
	b) the gap between exposed parts of the wheelchair that move relative to each other are maintained throughout the range of movement at less than the applicable minimum value or more than the applicable maximum value set out in Table 1; or	No such parts that move relative to each other	N/A

EN 12184: 2022			
Clause	Requirement + Test	Result – Remark	Verdict
	c) if the intended purpose of the wheelchair cannot be met without a hazard such as squeezing, a warning and instructions on how to control the risk is provided in the instructions for use. The design of a guard take into consideration the forces that can be applied in normal use.	Pinch point warning labelled.	P
6.13	**Surfaces, corners, edges and protruding parts**		P
	If not required for intended use, accessible edges, corners and surfaces of the wheelchair are smooth and be free from burrs and sharp edges. If not required for intended use, wheelchairs have no protruding parts. Where practicable, protruding parts have protection to prevent injury and/or damage.		P
6.14	**Ergonomic principles**		P
	Wheelchairs is designed in accordance with the ergonomic principles set out in EN 614-1:2006+A1:2009, taking into account the specific needs of the intended occupant. The ergonomic principles set out in EN 614-1:2006+A1:2009 also apply to an assistant, those involved in care of the wheelchair occupant, and those involved in transportation and storage of the wheelchair.	Considered	P
	Grips, handles and foot supports are suit the functional anatomy of the occupant and/or assistant, in accordance with the intended use, and meet the following requirements:		P
	a) the distance between any handle (part intended to be gripped) requiring an operating force of more than 10 N and any other part of the wheelchair is not less than 35 mm;	Freewheel bar complied.	P
	b) the vertical distance between the upper surface of a foot support or pedal in its operating position and any other part of the wheelchair is not less than 75 mm;		P
	c) the diameter of any operating handle or knob requiring an operating force of more than 10 N is between 19 mm and 43 mm;	Freewheel bar complied.	P
	d) the upper surface of any pedal intended for operation by an assistant is not more than 300 mm above the ground.	No such pedal.	N/A
6.16	**Applicable provisions for specified types of wheelchair**		N/A
	Annex G specifies the provisions in this document that apply to some specified types of wheelchair. Wheelchairs of types listed in G.1 is meet the applicable requirements of Annex G.	Not such specified type of wheelchair.	N/A
7.	**PREPARATION FOR TESTING**		P
7.1	**General**		P
	Unless otherwise specified in Clauses 8, 9, 10, 11 and 12, the wheelchair is prepared for testing as specified in ISO 7176-22:2014 with the following modification.		P

EN 12184: 2022			
Clause	Requirement + Test	Result – Remark	Verdict
	If a test procedure requires the use of a test dummy or human test occupant, they are selected and fitted as specified in 7.2 or 7.3. This instruction supersedes instructions for loading the wheelchair in the referenced standards.		P
	If, due to the speed of the wheelchair, the test plane specified in a referenced document is of insufficient size to conduct the specified tests, use the horizontal test plane specified in 4.1 or an inclined test plane specified in 4.2 as applicable.		P
7.2	**Test dummy**		P
	Select a test dummy, as specified in ISO 7176-11:2012, of mass equal to the maximum occupant mass specified by the wheelchair manufacturer, with a tolerance of 0 kg to +5 kg.	Refer to ISO 7176-11 report.	P
	Fit the test dummy in the wheelchair as specified in ISO 7176-22:2014.	Refer to Iso 7176-22 report.	P
7.3	**Human test occupant**		P
	Select a human test occupant whose mass, in combination with any supplementary weights as specified in 4.7, is equal to the maximum occupant mass specified by the wheelchair manufacturer, with a tolerance of 0 kg to + 5 kg.	Human test occupant: 62 kg Supplementary weights: 98 kg	P
	Seat the occupant in the wheelchair and position and secure the supplementary weights to give substantially the same mass distribution as the test dummy when fitted as specified in ISO 7176-22:2014.	Refer to Iso 7176-22 report.	P
8.	**WHEELCHAIR PERFORMANCE**		P
8.1	**Performance of driving characteristics**		P
8.1.1	**General**		P
	The loaded wheelchair is meet the driving performance requirements specified in Table 3 and Table 4 for the type class of the wheelchair as specified in Clause 5.		P
	The rated slope specified by the manufacturer is not less than that specified in Table 3 for the type class of the wheelchair.	6°	P
8.1.2	**Ability to climb rated slope**		P
8.1.2.1	**Requirements**		P
	The wheelchair is capable of climbing at a speed not less than 2 km/h.		P
	— the applicable rated slope for the type class of wheelchair specified in Table 3, or		N/A
	— the rated slope specified by the manufacturer, if it is greater.	6°	P

EN 12184: 2022			
Clause	Requirement + Test	Result – Remark	Verdict
	The wheelchair passes the test specified in 8.1.2.2 if it achieves or exceeds a speed of 2 km/h after travelling 5 m up the slope.		P
8.1.2.2	**Test method**		P
	Use an inclined test plane as specified in 4.2 and the means to measure speed specified in 4.5. Starting on the inclined test plane, drive the loaded wheelchair up the slope using the maximum speed command. When the wheelchair has travelled (5,0 ± 0,1) m up the slope and is inside the test area, measure and record the speed to an accuracy of ± 10 %.	Speed measured: 1.55 m/s	P
8.1.3	**Ground unevenness**		P
8.1.3.1	**Principle**		P
	It is important that a wheelchair is able to drive on uneven terrain without stopping even if one wheel is at a higher level than the others.		P
8.1.3.2	**Requirement**		P
	The wheelchair is capable of driving when any of its wheels is raised to a height specified in Table 3 for ground unevenness.		P
8.1.3.3	**Test method**		P
	a) Place the loaded wheelchair on the horizontal test plane. b) Place the test block specified in 4.8 under one wheel, such that one of its largest faces is flat on the test plane with the centre of the block beneath the point of contact with the wheel. c) Attempt to drive the loaded wheelchair off the test block. d) Record the result of the test. e) Repeat for the remaining wheels, one at a time. f) The test is passed if the wheelchair is able to drive off the test block for each wheel.	Complied.	P
8.1.4	**Maximum downhill speed**		P
8.1.4.1	**Requirement**		P
	The wheelchair is not exceed 125 % of its maximum speed on the horizontal, when driving down		P
	— the applicable rated slope for the type class of wheelchair specified in Table 3, or		N/A
	— the rated slope specified by the manufacturer, if it is greater.	6°	P
8.1.4.2	**Test method**		P

EN 12184: 2022			
Clause	Requirement + Test	Result – Remark	Verdict
	a) Drive the loaded wheelchair at maximum speed down the inclined test plane (4.2) with the required slope. b) Measure the speed achieved, using the means specified in 4.5, when the wheelchair is inside the test area. c) Record the measured speed and record whether the wheelchair has met the requirement.	Max. speed on the horizontal: 2.03 m/s Max. downhill speed on the rated slope: 2.39 m/s	P
8.1.5	**Dynamic stability**		P
8.1.5.1	**Requirements**		P
	The dynamic response score of the wheelchair is 2 or 3 as specified in Table C.1 of ISO 7176-2:2017 when tested on		P
	— the applicable rated slope for the type class of wheelchair specified in Table 3, or		N/A
	— the rated slope specified by the manufacturer, if it is greater.	6°	P
8.1.5.2	**Test method**		P
	a) Load the wheelchair with the test dummy in accordance with 7.2. Do not use a human test occupant.	160 kg dummy used.	P
	b) Test the loaded wheelchair in accordance with ISO 7176-2:2017 with the following modifications:		P
	1) for tests on slopes the test plane is inclined relative to the horizontal as specified in 8.1.5.1;		P
	2) fixed test planes or adjustable test planes may be used;		P
	3) if the manufacturer recommends a technique for driving on a slope, test the wheelchair using only the recommended technique; if not, the test methods are unmodified;	Unmodified.	P
	4) where the maximum occupant mass is greater than 100 kg, repeat the rearward dynamic stability tests with a 100 kg dummy fitted to the wheelchair.	Repeated the rearward tests and complied.	P
8.1.6	**Obstacle climbing and descending**		P
8.1.6.1	**Requirements**		P
	The wheelchair is capable of climbing and descending obstacles of the height specified in Table 3 for the type class of the wheelchair without any part of the wheelchair other than wheels or a kerb climbing device contacting the obstacle or the test plane.		P
8.1.6.2	**Test method**		P
	Test the wheelchair as specified in ISO 7176-10:2008 for climbing and descending a test obstacle of the height specified in Table 3 for the type class of the wheelchair or		N/A
	the maximum obstacle height specified by the manufacturer, whichever is greater.	50 mm	P

EN 12184: 2022			
Clause	Requirement + Test	Result – Remark	Verdict
	If the manufacturer specifies a method for climbing and descending steps, kerbs or obstacles, test as specified in ISO 7176-10:2008 using only the manufacturer's method. If the manufacturer specifies a run-up distance greater than that specified in ISO 7176-10:2008, limit the run-up distance to the maximum specified in that document.	Backward to climbing and descending an obstacle. See ISO 7176-10 test report.	P
	If the manufacturer of the wheelchair does not specify a method for climbing and descending steps, kerbs or obstacles, test as specified in ISO 7176-10:2008 using the methods specified in that document.		N/A
8.1.7	**Static stability**		P
8.1.7.1	**Requirements**		P
	The wheelchair is meet or exceed the minimum requirements for static stability specified in Table 3 for the type class of the wheelchair.		P
8.1.7.2	**Test method**		P
	Test the loaded wheelchair in the least-stable configuration for each direction as specified in ISO 7176-1:2014 to determine whether it meets or exceeds the angles in Table 3 for the type class of the wheelchair.	Refer to ISO 7176-1 Report.	P
	Where the maximum occupant mass is greater than 100 kg, repeat the rearward static stability test with a 100 kg dummy fitted to the wheelchair.	Repeated the rearward test and complied.	P
8.1.8	**Maximum speed**		P
8.1.8.1	**Requirements**		P
	The maximum speed of the wheelchair when travelling forwards and travelling in reverse on the horizontal is not exceed the maximum speed requirements specified in Table 3 for the type class of the wheelchair.		P
8.1.8.2	**Test method**		P
	Test the loaded wheelchair as specified in ISO 7176-6:2018 for the maximum forward speed and maximum reverse speed on a horizontal surface.	Refer to ISO 7176-6 Report.	P
	Record the results and determine whether the requirement has been met.	7.30 km/h	P
8.1.9	**Distance range**		P
8.1.9.1	**Requirements**		P
	The theoretical continuous driving distance range for the wheelchair is not less than the requirement specified in Table 3 for the type class of the wheelchair.		P
8.1.9.2	**Test method**		P

EN 12184: 2022			
Clause	Requirement + Test	Result – Remark	Verdict
	Load the wheelchair as specified in ISO 7176-4:2008, except that the mass of the load is the maximum occupant mass or 100 kg, whichever is the lower.	160 kg used as specified by the manufacturer.	P
	Test the loaded wheelchair as specified in ISO 7176-4:2008.	Refer to ISO 7176-4 Report.	P
	Record the results and determine whether the requirement has been met.	32.0 km	P
	It is recognized the use of shorter test tracks in the range specified by ISO 7176-4:2008 could give smaller values of theoretical distance range. Use of the largest specified track length should be treated as the referee method.	Maximum track range 100 m is used.	P
8.2	**Static, impact and fatigue strength**		P
8.2.1	**Requirements**		P
	The wheelchair is conformed to the requirements of ISO 7176-8:2014 with the exception that wheelchairs of Class A are not required to be tested as specified in ISO 7176-8:2014, 10.4, drop test.		P
	Arm supports are conformed to the static loading requirements of ISO 7176-8:2014 in the least favorable intended operating position.		P
8.2.2	**Test method**		P
	Test the wheelchair in accordance with ISO 7176-8:2014 with modifications as specified in 8.2.1.	Refer to ISO 7176-8 report.	P
8.3	**Wheelchairs for use as seats in motor vehicles**		N/A
	If the manufacturer specifies that the intended use of the wheelchair includes use as a seat in a motor vehicle, the wheelchair has conformed to the requirements of ISO 7176-19:2008, with the following modifications to subclauses of ISO 7176-19:2008.	Not a wheelchair intended for use as seats in motor vehicles.	N/A
	— 4.1.2 is replaced by the following: If a wheelchair is intended by the manufacturer to also be secured by a docking securement device in public transportation and/or different private vehicles, the securement points on the wheelchair and/or of the wheelchair tiedown adaptors has conformed to the performance requirements in Clause 5.		N/A
	5.1, second paragraph, is replaced by the following: All webbing of wheelchair-anchored belt restraints have a burning rate not exceeding 100 mm/min when tested as specified in ISO 3795.		N/A
	— 5.2.1 a) is replaced by the following: If the wheelchair has a head restraint, the horizontal excursions of the ATD and the wheelchair, with respect to the impact sled, not exceed the limits in Table 7 at any time during the test.		N/A

EN 12184: 2022			
Clause	Requirement + Test	Result – Remark	Verdict
	If the wheelchair does not have a head restraint, the horizontal excursions of the ATD and the wheelchair, with respect to the impact sled, not exceed the limits in Table 7 at any time during the test with the exception that the excursion of the back of the head of the ATD, Xhead, R, is not measured.		N/A
	— 5.2.2 e) is replaced by the following: Primary occupant-load-carrying components of the wheelchair not show visible signs of failure, unless there is a backup system to provide support. If the wheelchair does not have a head restraint, risks associated with head excursion and neck forces to which the occupant can be exposed during vehicle collisions is addressed in the risk management process (see 6.1).		N/A
8.4	**Climatic performance**		P
	The wheelchair has conformed to the requirements of ISO 7176-9:2009. ISO 7176-9:2009 includes testing for resistance to ingress of liquid, which is also required by ISO 7176-14:2008, 13.1. It is not necessary to duplicate the test.	Refer to ISO 7176-9 Report.	P
9.	**COMPONENT PROPERTIES**		P
9.1	**Foot supports, lower leg supports, and arm supports**		P
9.1.1	**Requirements**		P
	The wheelchair was fitted with foot supports that have a means of positioning the occupant's feet at the required height and prevent the occupant's feet from sliding backwards.		P
	Any swing away, movable or removable foot support, lower leg support assembly or arm support fitted on the wheelchair are:	No such parts.	N/A
	a) incorporate a means to locate it securely in any intended operating position,		N/A
	b) be adjustable in increments not exceeding 25 mm,		N/A
	c) be accessible and operable by the occupant or an assistant or both in accordance with the manufacturer's intended use of the wheelchair,		N/A
	d) be within the reach space shown in Figure 1, and		N/A
	e) be operable without the use of tools.		N/A
	Where the wheelchair has separate foot supports which have a gap between them or the possibility of a gap being formed when they are loaded,	No separate foot support used.	N/A
	f) means to prevent the occupant's feet from sliding into the gap is provided, or		N/A

EN 12184: 2022			
Clause	Requirement + Test	Result – Remark	Verdict
	g) when the foot supports are tested in accordance with 9.1.2.2, any gap between them is less than: — 25 mm if the wheelchair is intended for use by a child; — 35 mm if the wheelchair is not intended for use by a child.		N/A
9.1.2	**Test methods**		P
9.1.2.1	**General performance**		P
	Fit foot supports, lower leg support assemblies and arm supports in the operating position(s) specified in the manufacturer's instructions. Adjust the foot supports, lower leg support assemblies and arm supports as specified in the manufacturer's instructions. Record whether the foot supports, lower leg support assemblies and arm supports have met the requirements.	Complied.	P
9.1.2.2.2	**Foot support gap**		N/A
	Simultaneously apply a force $F\ ^{+5}_{0}$N to the centroid of each foot support, normal to the plane of the unloaded foot support. In cases where the foot support has no identifiable plane, apply the force within 5° of vertical. The force *F* is calculated from the following equation: $F = 0{,}125 \times m \times g$ where *F* is the force applied to each foot support, expressed in newtons; *m* is the maximum occupant mass specified by the manufacturer, expressed in kilograms; *g* is the acceleration due to gravity, 9,81 m/s². Apply the force for 5 s to 10 s. While the force is being applied measure the shortest distance between the foot supports, as follows: 1) identify the surfaces of the foot supports that enclose the gap between the foot supports; 2) from each point on the surface of one foot support, measure the distance to the nearest point on the surface of the opposite foot support; 3) record the largest distance measured to an accuracy of ±1 mm. Record whether the foot supports have met the requirements.	No separate foot support used.	N/A
9.2	**Component mass**		P

EN 12184: 2022			
Clause	Requirement + Test	Result – Remark	Verdict
	If the wheelchair is intended to be dismantled for storage or transportation, any component that requires moving or handling that has a mass greater than 10 kg is provided with suitable handling devices (e.g. handles). The manufacturer has provided information indicating the points where such components can be lifted and describing how they is handled during disassembly, lifting, carrying, and assembly to reduce risks to the person or persons moving or handling them.	No such detachable part has a mass greater than 10 kg.	P
9.3	**Pneumatic tyres**		P
	All pneumatic tyres on the wheelchair have the same type of valve connection. Valves should be readily accessible when using the intended inflating tool.	Complied.	P
	The tyres or the rims is marked with the maximum pressure in kPa, bar or PSI.	Front wheels: 50 PSI Rear wheels: 40 PSI	P
9.4	**Means for maintaining a sitting posture**		P
	The wheelchair has provision for a means to be fitted that enables the occupant to maintain a sitting posture. If the risk management process (6.1) indicates a risk of the occupant tipping or sliding forwards when the wheelchair is decelerating, the means is provided with the wheelchair; otherwise the manufacturer of the wheelchair make available such means as an option.	Safety belt provided.	P
9.5	**Resistance to ignition**		P
9.5.1	**General**		P
	The surfaces of components which support the occupant, or which stay in contact with the occupant or the occupant's clothing, is tested as specified in 9.5.2. Progressive smoldering ignition or flaming ignition as defined in the standard applied is not occur. This requirement does not apply to components of the power and control system, which are covered by 9.5.3. It is not necessary to test components that are inherently resistant to ignition, e.g. steel frame tube.		P
9.5.2	**Test methods**		P
9.5.2.1	**Selection of test method**		P
	The test method specified in 9.5.2.2 is the preferred test method. It is the referee test method, which is used to resolve doubts or dispute. The test methods specified in 9.5.2.3 may be used as alternatives.		P
9.5.2.2	**Referee test method**		P

EN 12184: 2022			
Clause	Requirement + Test	Result – Remark	Verdict
	Select and test a sample of the component as specified in ISO 16840-10:2021.	Refer to ISO 16840-10:2021 Report: SHES240300570018	P
9.5.2.3	**Alternative test methods**		N/A
	Test the material of each component in accordance with EN 1021-2:2014 or ISO 8191-2:1988.		N/A
9.5.3	**Power and control systems**		P
	Either of the following options a) or b) applied: a) The manufacturer has adopted appropriate means to eliminate or reduce as far as reasonably practicable the risk of a hazardous situation developing from the ignition of any part of the power and control system of the wheelchair. The manufacturer has applied the risk management process (see 6.1) to manage that risk.	See Risk Management Report File No.: CE-MDR-TCF003-01, Rev. A/0	P
	b) The power and control system of the wheelchair have met the requirements of ISO 7176-14:2008, 9.7, resistance to ignition.	Refer to ISO 7176-14 Report.	P
10	**PROPULSION AND BRAKING SYSTEMS**		P
10.1	**Means for operating brakes**		P
10.1.1	**Requirement**		P
	a) Means for operating brakes were:		P
	1) be accessible and operable by the occupant or an assistant or both in accordance with the manufacturer's intended use of the wheelchair;		P
	2) be within the reach space shown in Figure 1, if the wheelchair is intended to be operated by the occupant;		P
	3) be within the reach space shown in Figure 2, if the wheelchair is intended to be operated solely by an assistant;		P
	4) have operating forces for engaging and disengaging that do not exceed those stated in Table 1 when tested in accordance with 10.1.2;		P
	b) If one or more brake levers are fitted to a wheelchair in the form used on bicycles and mopeds:		P
	1) for wheelchairs with a maximum occupant mass not greater than 150 kg, the force applied to each lever to hold the loaded wheelchair stationary on the rated slope not exceed 60 N;	Maximum occupant mass greater than 150 kg	P
	2) for wheelchairs with a maximum occupant mass greater than 150 kg, the force applied to each lever to hold the loaded wheelchair stationary on the rated slope should not exceed 60 N;	Freewheel bar: 45.0 N	P

EN 12184: 2022			
Clause	Requirement + Test	Result – Remark	Verdict
	3) the handgrip width of such brake levers when no force is applied, measured 15 mm from the end of the brake lever, is not greater than 100 mm and should not be greater than 80 mm (see Figure 3).	No handgrip.	N/A
	c) Means for releasing parking brakes is protected against activation caused by accidental contact.		P
10.1.2	**Test for determination of brake operating forces**		P
	a) Adjust the brakes as specified by the manufacturer.	Non-adjustable.	N/A
	b) Select the part of the lever through which the force is to be applied as shown in Figure 4.		N/A
	1) If the lever is fitted with a generally spherical knob, apply the force through the centre of the knob.	No such knob fitted.	N/A
	2) If the lever is tapered, apply the force through the point where the largest cross section intersects the centre line of the lever.	No such tapered lever fitted	N/A
	3) If the lever is parallel or any shape other than those above, apply the force through a point on the centre line of the lever 15 mm from the end.	No such lever.	N/A
	4) If the form of the lever is such that the lever is gripped by the whole hand apply the force through the centre line of the lever 15 mm from the end.		P
	5) If the brake is operated by pushing or pulling a bar or pad, apply the force to the centroid of the bar or pad.		P
	c) Apply the brakes while measuring the force with the device specified in 4.4 aligned in the direction of travel of the point of application of the force in order to measure the maximum application force required. d) Release the brakes while measuring the force with the device specified in 4.4 aligned in the direction of travel of the point of application of the force in order to measure the maximum releasing force required. e) Perform c) and d) three times in total and record the measurements. f) Calculate and record the arithmetic mean value of the application and the release forces measured separately. g) Determine whether or not the requirements for operating forces stated in Table 3 have been met.	Freewheel bar: 45.0 N	P
10.2	**Braking functions**		P
10.2.1	**Requirements**		P

EN 12184: 2022			
Clause	Requirement + Test	Result – Remark	Verdict
	a) The wheelchair has a running brake which operates independently of tyre wear and tyre inflation pressure and which does not exceed the maximum stopping distance specified in Table 4 when tested in accordance with 10.2.2.1.		P
	b) The wheelchair has a running brake which, when operated after the wheelchair has been put into freewheel mode, bring the wheelchair to a stop.	By freewheel mode.	P
	The maximum stopping distances of Table 4 do not apply for a running brake operated after the wheelchair has been put into freewheel mode.		P
	c) The risk management process has addressed risks due to loss of braking if a wheel loses contact with the ground (see 6.1).		P
	d) The wheelchair has an automatic brake, which operates independently of tyre wear and tyre inflation pressure and which is operated by releasing the control device to achieve a zero speed command.	Automatic brake when the control devices is released, the control device will achieve a zero-speed command.	P
	e) The wheelchair have a parking brake which operates independently of tyre wear and tyre inflation pressure.		P
	f) Parking brakes have meet the parking brake effectiveness requirement in Table 3 when tested in accordance with 10.2.2.2.		P
	g) Parking brakes is operable when there is no power from the battery supplying the drive system.		P
	h) Parking brakes is operable when the wheelchair is in freewheel mode.	By end of freewheel mode	P
	i) If they are subject to wear, parking brakes have provision for adjustment and/or replacement as specified by the manufacturer.	No such parking brake fitted.	N/A
	j) If the wheelchair is fitted with arm supports that can be moved or removed to enable transfer of the occupant into or out of the wheelchair, when tested in accordance with 10.2.2.3, engaged parking brakes have no parts that protrude above the level of the occupied seat that can make contact with the occupant during transfer.		P
	k) When parking brakes are tested in accordance with 10.2.2.4, no parking brake mechanism is moved from the pre-set position and no component or assembly of parts show visible signs of cracks, breakages, gross deformations, free play, loss of adjustment, or any other damage, that adversely affect the function of the wheelchair.		P
	After testing of the parking brake in accordance with 10.2.2.4, parking brakes have met the parking brake effectiveness requirement in Table 3 when tested again in accordance with 10.2.2.2.		P
10.2.2	**Test methods**		P
10.2.2.1	**Determination of the effectiveness of running brakes**		P

EN 12184: 2022			
Clause	Requirement + Test	Result – Remark	Verdict
	Perform the tests for normal, reverse command and emergency operation specified in 7.3, 7.4 and 7.5 of ISO 7176-3:2012 using the loaded wheelchair on the horizontal and on the steepest slope specified in ISO 7176-3:2012 or the rated slope, whichever is steepest. The wheelchair fails the requirement if the maximum stopping distance specified in Table 4 of this document is exceeded on the horizontal, or if the wheelchair fails to stop on the test slope.	Refer to ISO 7176-3 Report.	P
10.2.2.2	**Determination of effectiveness of parking brakes**		P
	a) Adjust the parking brake in accordance with the manufacturer's instructions without exceeding the operating force requirements stated in Table 3. b) Test the loaded wheelchair facing uphill in accordance with ISO 7176-3:2012, with the test plane inclined to the horizontal at the applicable angle stated in Table 3 for the type class of the wheelchair or at the rated slope specified by the manufacturer, whichever is greater. c) Repeat b) with the wheelchair facing downhill. d) Determine whether the parking brake holds the loaded wheelchair stationary on the slope.	Refer to ISO 7176-3 Report.	P
10.2.2.3	**Protrusion of parts of the parking brakes**		P
	a) Engage the parking brake. b) Move or remove the arm support to enable transfer. c) Identify any parts of the parking brake that protrude above the plane of the lower surface of the thigh loading plate of the test dummy. d) Determine whether the parking brake meets the requirement.	Complied.	P
10.2.2.4	**Fatigue strength of parking brakes**		P

EN 12184: 2022			
Clause	Requirement + Test	Result – Remark	Verdict
	a) The parking brake may be tested in accordance with b) to g) below, or as specified in ISO 7176-8:2014, 10.5. b) Carry out the test with the parking brake mounted on the wheelchair or mounted on a suitable test fixture that simulates mounting on the wheelchair. If the wheelchair is fitted with two identical brakes (left and right), test only one of the brakes. c) Adjust the parking brake in accordance with the manufacturer's instructions without exceeding the operating force requirements stated in Table 3. d) Set up the means for moving the brake lever (4.12) so that no twisting or bending forces are applied to the brake lever. e) Move the lever operating the brake smoothly from the non-braking position to the braking position for 60 000 cycles at a frequency not greater than 0,5 Hz. Carry out maintenance during testing only in accordance with the manufacturer's instructions. f) Inspect the brake mechanism and determine whether it has met the requirement. g) If a test fixture was used, return the brake mechanism to the wheelchair.	Refer to ISO 7176-8 Report.	P
10.3	**Freewheel device**		P
	The wheelchair is fitted with a freewheel device that:		P
	— be accessible and operable by the occupant or an assistant or both in accordance with the manufacturer's intended use of the wheelchair,	By assistant.	P
	— be within the reach space shown in Figure 1, if the wheelchair is intended to be operated by the occupant,		N/A
	— be within the reach space shown in Figure 2, if the wheelchair is intended to be operated solely by an assistant;		P
	— have operating forces for engaging and disengaging that do not exceed those stated in Table 3,	Freewheel bar: 45.0 N	P
	— be operable without detaching any parts,		P
	— not depend on the battery power supplying the motor drive system,		P
	— have two defined positions including clear indication of freewheel mode and drive mode,		P
	— prevent use of the wheelchair's drive system, if the freewheel device is activated.		P

EN 12184: 2022			
Clause	Requirement + Test	Result – Remark	Verdict
	These requirements apply in addition to those concerning non-powered mobility stated in ISO 7176-14:2008.		P
	A battery independent from the motor drive battery may be used to supply energy to enable freewheel mode.	No supply energy is needed.	N/A
	Freewheel devices is protected against activation caused by accidental contact.		P
11	**OPERATIONS**		P
11.1	**Operations intended to be carried out by the occupant and/or assistant**		P
	Wheelchairs is designed to facilitate ease of operation by the occupant and/or assistant as specified in the manufacturer's instructions.		P
	— operation of adjustable seating and adjustment of postural supports,	Non-adjustable seating system.	N/A
	— use of detachable components, including removable arm supports, lower leg support assemblies, etc., to facilitate safe transfers into and out of the wheelchair,	Control device can be installed on both of two side arm rest.	P
	— use of folding mechanisms, including folding frames, etc., to facilitate storage and transportation of unoccupied wheelchairs,		P
	— carrying out maintenance, including use of tools, etc.,		P
	— use of manual steering controls,	No such manual steering controls.	N/A
	— use of braking systems and freewheel devices,		P
	— use of assistant controls,	Freewheel device.	P
	— use of control devices.		P
11.2	**Controls intended for operation by the occupant**		P
	Controls intended to be operated by the occupant while seated is within the occupant reach space shown in Figure 1.		P
	The following controls, if fitted, are included:		P
	— on/off switch or key,		P
	— speed regulator,		P
	— speed pre-setting,		P
	— running brake,		P
	— parking brake,		P
	— audible warning device,		P
	— direction indicator,	No such indicator.	N/A
	— direction switch,	No such direction switch.	N/A
	— control device,		P
	— manual steering controls,	No such manual steering controls.	N/A

EN 12184: 2022			
Clause	Requirement + Test	Result – Remark	Verdict
	— lighting controls,	No such lighting controls.	N/A
	— seating adjustments,	Non-adjustable seating system.	N/A
	— detachable components, including removable arm supports, lower leg support assemblies, etc., to facilitate safe transfers into and out of the wheelchair,	Control device can be installed on both of two side arm rest.	P
	— steering controls,		P
	— freewheel device.	Controlled by an assistant	N/A
11.3	**Controls intended for operation by an assistant**		N/A
	Controls intended to be operated by an assistant is within the reach space shown in Figure 2.		P
	— brakes,	Controlled by occupant.	N/A
	— control devices,	Controlled by occupant.	N/A
	— push handles, and		P
	— electrical ancillary equipment.	No such ancillary equipment.	N/A
11.4	**Assistant control unit, push handles and handgrips**		P
11.4.1	**Requirements**		P
	Switches intended to be operated by an assistant while driving the wheelchair is attached to an assistant control unit.	No such switches intended to be operated by an assistant.	N/A
	When an assistant control unit is fitted:	No such assistant control unit.	N/A
	— the unit is positioned behind the wheelchair's back support, between 900 mm and 1 200 mm from the floor to the centre of the operating means for the control device (e.g. joystick handle), and		N/A
	— there is a means to support the assistant’s hand or hands used to operate the control device.		N/A
	When push handles are fitted, no part of the wheelchair are lie within a space to the rear of the wheelchair bounded by the following:		P
	— a plane at 85°to the horizontal, that touches the rearmost points of the push handles as shown in Figure 5;		P
	— two planes not less than 350 mm apart equidistant from a vertical plane parallel to the forward direction of travel that bisects the wheelchair, unless the intended occupant is a child;		P
	— the horizontal test plane.		P
	When the wheelchair is fitted with steering and/or manoeuvring handgrips for use by an assistant, the handgrips is at least 75 mm in length and between 20 mm and 50 mm in diameter.	No such steering or manoeuvring hand grips.	N/A

EN 12184: 2022			
Clause	Requirement + Test	Result – Remark	Verdict
	When manoeuvring handgrips are fitted with controls that are intended to be used by being gripped by one hand, the handgrip width when no force is applied is not greater than 100 mm and should not be greater than 80 mm (see Figure 3).	No such steering or manoeuvring hand grips.	N/A
11.4.2	**Test method**		P
	a) Place the wheelchair in the test area of the horizontal test plane.		P
	b) If an assistant control device is fitted, note its position and measure the height of its operating means above the test plane.		P
	c) Project the planes specified in 11.4.1 and determine whether any part of the wheelchair lies within the enclosed space.		P
	d) Measure the dimensions of the handgrips on the push handles.		P
	e) Where applicable, measure the grip width of the controls fitted to the push handles that are intended to be used by being gripped by one hand.		P
	f) Inspect the wheelchair for means to support the assistant's hand or hands used to operate the control device while the wheelchair is being driven.		P
	g) Record whether the wheelchair has met the requirements.	Complied.	P
11.5	**Operating forces**		P
11.5.1	**Requirements**		P
	All controls, except for means to operate brakes, have operating forces for engaging and releasing that do not exceed those stated in Table 3 when tested in accordance with 11.5.2.		P
	In addition, to achieve the intended function of the system or device being operated, for knobs intended to be gripped and turned by one hand		P
	— where the diameter of the knob is greater than or equal to 25 mm and the force is transmitted by friction, the numerical value of the torque, expressed in Nm, is not greater than 0,05 times the numerical value of the diameter of the knob, expressed in mm, and	No such knob used.	N/A
	— where the diameter of the knob is less than 25 mm diameter, the numerical value of the torque, expressed in Nm, is not greater than 0,025 times the numerical value of the diameter of knob, expressed in mm.	No such knob used.	N/A
11.5.2	**Test method**		P
	a) Position a means to apply force or torque as applicable: 1) where the operation is performed by pushing or pulling, position the means to apply force parallel to the direction of operation and in the middle of the knob or button;		P

EN 12184: 2022			
Clause	Requirement + Test	Result – Remark	Verdict
	2) in the case of a lever of length 30 mm or greater, position the means to apply force at a distance of 15 mm from the end of the operating lever;	Freewheel bar and joystick bar.	P
	3) in the case of a lever of length less than 30 mm, position the means to apply force at the midpoint of the lever;	No such lever of length less than 30 mm.	N/A
	4) for a turning knob, use a suitable means (e.g. a force gauge) to measure torque concentrically on the knob.	No such knob used.	N/A
	b) Gradually increase the force or torque until the intended function of the system or device as specified by the manufacturer's instructions is achieved. c) Measure and record the maximum operating force. d) Perform b) to c) three times in total. e) Calculate and record the arithmetic mean of the three recorded measurements.	Push buttons: 3.4 N Joystick bar: 3.0 N Freewheel bar: 45.0 N	P
11.6	**Occupied seating adjustments**		N/A
11.6.1	**Requirements**		N/A
	If the manufacturer specifies that the seating can be adjusted by an assistant or the occupant or both while the occupant is seated: — the assistant and/or the occupant is not have to apply or withstand a force (e.g. the combined weight of the occupant and the seating) which presents a moving and handling safety hazard to the assistant and/or the occupant; and — movement of the seating, whether continuous or incremental, is prevented automatically when the assistant or occupant releases the means of operation.	Non-adjustable seating system.	N/A
	Controls for seating adjustments intended to be operated by the occupant is accessible to the occupant from all seating positions.	Non-adjustable seating system.	N/A
11.6.2	**Test method**		N/A
	a) Adjust the seating as specified in the manufacturer's instructions. b) Record whether the wheelchair has met the requirements.		N/A

12	**ELECTRICAL SYSTEMS**		P
12.1	**General requirements**		P
	The wheelchair has conformed to the requirements of ISO 7176-14:2008, except as specified in 9.5.3.	Refer to ISO 7176-14 Test Report.	P

EN 12184: 2022			
Clause	Requirement + Test	Result – Remark	Verdict
	The wheelchair and battery charger has conformed to the requirements of ISO 7176-21:2009.	Refer to ISO 7176-21 Test Report.	P
12.2	**Circuit protection**		P
12.2.1	**Requirement**		P
	Operation of the circuit protection for each of the following functions are not affect the operation of the remaining functions:		P
	a) electrically powered driving, braking and steering;		P
	b) electrically powered parts of the body support system;	No such powered parts.	N/A
	c) electrically powered lights, direction indicators and hazard warning flashers.	No such powered lights, direction indicators.	N/A
12.2.2	**Preparation**		P
	Examine the wheelchair and its circuit diagram to locate:		P
	a) conductors for each motor and actuator used to drive, brake and/or steer the wheelchair;		P
	b) conductors for each motor and actuator used to move parts of the body support system;	No such powered parts.	N/A
	c) conductors for each light, direction indicator and hazard warning flasher.	No such powered lights, direction indicators.	N/A
12.2.3	**Test method**		P
	a) For each pair of conductors identified in 12.2.2 a) in turn, apply a short circuit between them and operate the control device so that any related circuit protection can operate, then attempt to operate the functions identified in 12.2.1 b) and c) and observe whether their operation is affected.	Stop without hazards.	P
	b) For each pair of conductors identified in 12.2.2 b) in turn, apply a short circuit between them and operate the controls for the body support system so that any related circuit protection can operate, then attempt to operate the functions identified in 12.2.1 a) and c) and observe whether their operation is affected.	No such powered parts.	N/A
	c) For each pair of conductors identified in 12.2.2 c) in turn, apply a short circuit between them and operate the lighting controls so that any related circuit protection can operate, then attempt to operate the functions identified in 12.2.1 a) and b) and observe whether their operation is affected.	No such powered lights, direction indicators.	N/A
12.3	**Battery chargers**		P
12.3.1	**General**		P
	Battery chargers for wheelchairs conform to the requirements of ISO 7176-25:2013, with the following modification.	Tested according to ISO 7176-31:2023 instead of ISO 7176-25:2013 as specified by the manufacturer.	P

EN 12184: 2022			
Clause	Requirement + Test	Result – Remark	Verdict
	5.1.2.2 is replaced by the following: Battery chargers have met the requirements of EN 60335-2-29:20041 for class II appliances. The applicable electrical requirements of EN 60601-1:20062 for class II ME equipment may be applied as an alternative to the applicable electrical requirements of EN 60335-2-29:20041. In addition, wheelchairs that include an on-board battery charger has conformed to the applicable electrical requirements of EN 60601-1:20062. Battery chargers has conformed to the requirements of ISO 7176-21:2009.	Off board battery charger. See attachment 1. See ISO 7176-21 Test report.	P
12.3.2	**Operation**		P
	Battery chargers operate without the need for intervention or supervision apart from connecting and turning on at the start of charging, and turning off and disconnecting at the end of charging.		P
12.3.3	**Manual adjustment for battery type**		N/A
	Where a battery charger is intended for use with more than one type of battery, and a manual operation is necessary to select the battery type: — the selected battery type is conspicuously visible from the exterior of the battery charger; — it is not possible to select the battery type without a tool, key entry combination or similar means for restricting access; and — the method for selecting the battery type is not consist of operations which are performed in normal use of the charger.	Not such battery charger.	N/A
12.4	**Charging connector**		P
	The wheelchair has a charging connector that is readily accessible and operable by the occupant or an assistant or both in accordance with the manufacturer's intended use of the wheelchair.		P
	The requirement is verified by inspection.		P
12.5	**Battery enclosures and containers**		P
	Battery enclosures and containers provide protection so that it should not be possible for liquids dropping from above to enter into them and onto any cell or battery they contain.	IP X4 Complied.	P
12.6	**Emergency stop**		P
	The wheelchair was fitted with one or more emergency stop devices to enable actual or impending danger to be averted.	By switching off.	P
	Each emergency stop device was:		P
	— be clearly identifiable, clearly visible and quickly accessible by the intended operator, and		P
	— stop the hazardous process as quickly as practicable, without creating additional risks.		P

EN 12184: 2022			
Clause	Requirement + Test	Result – Remark	Verdict
	Once active operation of the emergency stop device has ceased following a stop command, that command is sustained by the wheelchair until that engagement is specifically overridden. It was not possible to engage the device without triggering a stop command. It is possible to disengage the device only by an appropriate operation, and disengaging the device is not restart the wheelchair but only permit restarting.		P
	The emergency stop function was available and operational at all times, regardless of the operating mode.		P
	Emergency stop devices were a back-up to other safeguarding measures and not a substitute for them.		P
	Additional emergency stop devices may be attached to a wheelchair to be operated by an assistant. Where the intended occupant has an impairment which restricts their ability to operate an emergency stop device, the risk management process (6.1) should take this into account.	Not such emergency stop device.	N/A
12.7	**Lighting**		N/A
	Wheelchairs intended by the manufacturer for outdoor use was supplied with integral lighting suitable for the operations concerned where the absence thereof is likely to cause a risk despite ambient lighting of normal intensity.	Used in hospital, senior center, family or similar circumstances where will not cause risk only	N/A
	Wheelchairs were subject to national requirements for lighting and reflectors.		N/A
	If there are no national requirements, the manufacturer conform to applicable automotive Directives of the European Union (76/756/EEC [12], 97/28/EC [13]).		N/A
12.8	**Switching off while driving**		P
	If the wheelchair is switched off while driving on the horizontal, it comes to a stop within the maximum stopping distances specified in Table 4.	Refer to ISO 7176-3 Test Report.	P
12.9	**Software**		N/E
	Software that is embedded in the wheelchair or is an integral part of the wheelchair, and the malfunction of which could give rise to a hazardous situation, is developed and maintained in accordance with EN 62304:2006.	Not evaluated in this report.	N/E
12.10	**Lithium cells and batteries**		P
	Sealed secondary lithium cells and batteries containing non-acid electrolyte has conformed to the requirements of EN 62133-2:2017.	See attachment 1.	P
12.11	**Remote control**		N/A

EN 12184: 2022			
Clause	Requirement + Test	Result – Remark	Verdict
	Where remote control is used for any moving part of the wheelchair or any lighting function, the following aspects is included in the risk management process: — loss of signal; — signal errors; — reliability level; — correct pairing between the remote control and the wheelchair; — correct identification of the paired remote control and wheelchair to the operator; — interference from multiple remote controls; — security and malicious interference; — reliability of software in the remote control; — gradual loss of power in the remote control; — range.		N/A
	This requirement applies regardless of whether the remote control acts between components of the wheelchair or between an external device and the wheelchair.		N/A
13	**INFORMATION SUPPLIED BY THE MANUFACTURER**		P
13.1	**General**		P
	Each wheelchair is provided with documentation and labelling that conform to the applicable requirements in EN ISO 20417:2021 in addition to the requirements specified in this document.		P
	The manufacturer has provided the documentation in three separate sections: pre-sale, user and servicing information, as specified in 13.2, 13.3 and 13.4 respectively. These may be provided as separate printed documents or in other forms of media to meet the needs of individual occupants or their assistants.	Provided in User's Manual. Doc.: ASD-2024-02A Ver.: 1.0	P
13.2	**Pre-sale information**		P
	Pre-sale information have included the following:		P
	a) information on how to obtain the user information in a format appropriate for use by visually impaired people;	See "Introduction"	P
	b) a description of the intended occupant of the wheelchair, including the occupant's mass;	See "Technical specification"	P
	c) the intended operator (occupant, assistant or both), intended use and the intended environment;	See "Introduction"	P
	d) the type class of the wheelchair: Class A, Class B or ClassC;	See "Technical specification"	P
	e) the overall dimensions (width, length and height) of the wheelchair and its mass when it is ready for use and, if applicable, when it is folded and/or dismantled for storage or transportation;	See "Technical specification"	P
	f) the minimum width of corridor in which the wheelchair can be turned to face the opposite direction;	See "Technical specification"	P

EN 12184: 2022			
Clause	Requirement + Test	Result – Remark	Verdict
	g) the rated slope, expressed in degrees;	See “Technical specification”	P
	h) the standard options that are available for the wheelchair;		P
	i) if the wheelchair can be dismantled or has any removable parts, the mass of the heaviest part;	See “Technical specification”	P
	j) a statement that the wheelchair is intended to be used as a seat in a motor vehicle, or		N/A
	a warning that the wheelchair is not intended to be used as a seat in a motor vehicle;	See “Safety warnings & instruction labels”	P
	k) the theoretical continuous driving distance range, expressed in kilometres, that the wheelchair can travel under its own power on the horizontal when tested in accordance with ISO 7176-4:2008, with the addition of a note explaining that the distance will be reduced if the wheelchair is used frequently on slopes, rough ground or to climb kerbs, etc.;	See “Technical specification”	P
	l) the maximum height of kerb which the wheelchair can descend safely;	See “Technical specification”	P
	m) if a programmable controller is fitted, information on the method of programming, the competency required to carry out the programming and the effects it can have on driving performance.	Not a programmable controller.	N/A
13.3	**User information**		P
	User information is provided by the manufacturer with each wheelchair. Further copies also is available for any subsequent user of the wheelchair. User information has contained the following where applicable:		P
	a) the unique identification number of the wheelchair or information on the location of the unique identification number on the wheelchair;	See “Safety warnings & instruction labels”	P
	b) any adjustment or settings required before the wheelchair can be used and warnings of how adjustments or settings affect stability;	See “Learning to get about”	P
	c) information on any adjustments that can be made and the competency required to carry out these adjustments;	See “Learning to get about” and “How to use”	P
	d) instructions on operation of all controls, including brakes;	See “How to use”	P
	e) instructions on how to engage and disengage the drive system;	See “How to use”	P
	f) the wheelchair manufacturer's recommended tyre pressure(s), expressed in kPa , bar or PSI;	Front wheel: 50PSI Rear wheel: 40PSI	P
	g) instructions for dealing with tyre punctures;	See “Maintenance”	P
	h) the battery type and nominal cut;	See “Technical specification”	P
	i) instructions for battery maintenance;	See “Battery”	P

EN 12184: 2022			
Clause	Requirement + Test	Result – Remark	Verdict
	j) instructions for operating the battery charger, including warnings regarding any potential safety hazards (e.g. a possibility of gas accumulating in the charging area, use of the wrong type of battery charger);	See “Precautions for Use”	P
	k) if required by the risk analysis, instructions for fitting an additional emergency stop device where the intended occupant has an impairment which could restrict their ability to operate one;	No such additional emergency stop device fitted.	N/A
	l) instructions on whether and how the wheelchair can be folded to assist in storage or transport;	See “How to use”	P
	m) instructions on dismantling and re-assembly of the wheelchair or any removable parts;	See “How to use”	P
	n) instructions regarding transport of the wheelchair when it is unoccupied (e.g. in a car or aeroplane);	See “How to use”	P
	o) if the manufacturer specifies that the wheelchair is intended for use as a seat in a motor vehicle, the method of attaching wheelchair tiedown and occupant restraints, and recommendations about suitable tiedown and restraint systems;	Not intended for use as a seat in motor vehicle.	N/A
	p) if the manufacturer specifies that the wheelchair is not intended for use in the motor vehicle, a warning to that effect;	See “Safety warnings & instruction labels”	P
	q) instructions on how to use the means for maintaining a sitting posture (see 9.4) and the circumstances in which it should be used;	See “How to use”	P
	r) instructions on how to obtain and fit the means for maintaining a sitting posture (see 9.4) if it is not supplied with the wheelchair;	Supplied with the wheelchair	N/A
	s) the positions of points intended to carry additional loads;		N/A
	t) instructions for preparing the wheelchair for long-term storage (e.g. longer than four months) and for preparing it for use afterward;	See “Warranty terms”	P
	u) warning that the wheelchair can disturb the operation of devices in its environment that emit electromagnetic fields (e.g. alarm systems of shops, automatic doors, etc.);	See “Guidance and Manufacturer’s Declaration”	P
	v) a warning that the driving performance of the wheelchair can be influenced by electromagnetic fields (e.g. those emitted by electricity generators or high-power sources);	See “Guidance and Manufacturer’s Declaration”	P
	w) a warning that the stopping distance on slopes can be significantly greater than on level ground;	See “Technical specification”	P
	x) information on the recycling of used batteries and of the wheelchair;	See “Environmental protection”	P
	y) if the characteristics of the wheelchair (including the occupant as applicable) exceed the limits specified in Appendix M of Commission Regulation (EU) No 1300/2014 [19], a statement to that effect (see Annex D for additional information);	Not exceed the limits.	N/A

EN 12184: 2022			
Clause	Requirement + Test	Result – Remark	Verdict
	z) information on how to find out about product safety notices and product recalls, for example by ensuring the supplier has up-to-date contact details;	Chapter 14 of manual	P
	aa) the expected service life of the wheelchair;	Chapter 2 of manual	P
	bb) information on how to get repairs and servicing;	Chapter 9 of manual	P
	cc) warranty information.	Chapter 2 of manual	P
13.4	**Service information**		P
	The service information has contained all the pre-sale information, user information and instructions necessary for the maintenance, adjustment and repair of the wheelchair and for the replacement of parts.	Combined into User's Manual.	P
13.5	**Labels**		P
	The manufacturer has applied permanent labelling for the following:		P
	a) the maximum load of the wheelchair, i.e. the total of the maximum occupant mass and the maximum mass of any other items intended to be carried by the wheelchair;	See marking plate	P
	b) devices for disengagement of the drive system, showing engaged and disengaged positions, including a warning that the drive system should be re-engaged before an occupant is left unattended or attempts to operate the wheelchair;	Marked on the motor.	P
	c) for wheelchairs where the intended use includes use as a seat in a motor vehicle, the position of attachment points for wheelchair tie-down and occupant restraint systems (WTORS);	Not intended use as a seat in a motor vehicle.	N/A
	d) for wheelchairs not intended to be used as a seat in a motor vehicle, a warning to that effect;	See marking plate.	P
	e) for Class A wheelchairs not intended for use outdoors, a warning to that effect.	Class B	N/A

- END OF EN 12184:2022 TEST REPORT, CONTINUOUS WITH ISO 7176-1 TEST REPORT -