



TEST REPORT NO. CBC-027/2024

Date 25.03.2024

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Subject of testing: Electric drive for a wheelchair
Classification according to PN-EN ISO 9999:2017-02: 12 21 24

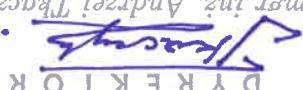
Type / Model: Tourer HD 20"
SN.: (01)05907467823119
(11)240306(21)8001
Product Code: RPT20AASHD

Manufacturer: REHASENSE Sp. z o.o.
ul. Sulejowska 45 G
97-300 Piotrków Trybunalski

Applicant: REHASENSE Sp. z o.o.
ul. Sulejowska 45 G
97-300 Piotrków Trybunalski

Kind of testing
Testing scope according to application of Client
Mechanical testing for conformity with PN-EN 12184 : 2023-02;
PN-EN ISO 21856:2023-01; ISO 7176-part 1, 2, 3, 4, 5, 6, 8, 9, 10

Test started: 4.03.2024
Test finished: 25.03.2024

Approved by:
D Y R E K T O R

mgr inż. Andrzej Tkaczyk

Special comments / enclosures:
1) Annex 1-2 – Identification of wheelchair elements

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Test results refer only to tested units.
Test results reported here are not applicable to the further modifications of the product affecting its structure, material or technology.
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CHARACTERISTIC OF ELECTRICALLY PROPELLED WHEELCHAIR

Name of wheelchair: Tourer HD 20" SN: (01)05907467823119(11)240306(21)8001
Maximum load capacity: 160 kg
Overall mass of wheelchair: 59,1 kg Class: A

Electric drive for a wheelchair

Mass of the drive: 39,0 kg Length of the drive: 970 mm Height of the drive: 900 mm
Width of the drive: 707 mm Wheel diameter: 587 mm Wheel width: 98 mm
Wheel size: 3.50-16 Pressure: 32 PSI/225 kPa Material of the drive: alum., steel, plastic

Description		Wheelchair		Wheelchair+ electric drive	
Dimensions:	Length:	1040 mm		1650 mm	
	Height (max.)	920 mm		1020 mm	
	Width:	850 mm		850 mm	
Construction of frame:	Material:	Aluminium	Aluminium/Steel	Welding	
	Method of fastening frame elements:	Welding	Unfolding	Unfolding	
	Ø external:	496 mm	496 mm	19 mm	
	Ø pipe:	19 mm	Aluminium	Aluminium	
Drive wheels	Way of fastening to driven wheel:	Bolts	Bolts	6	
	Number of fastening points to driven wheel:	6	6	6	
	Material of ring of a wheel:	Aluminium	Aluminium	Aluminium	
	Dimension of tyre:	24"x2" (50x507mm)	3.50-16(ø380mmx88mm)	32 PSI, 225 kPa	
Driving wheels	Pressure:	35-70 PSI, 2,5-5 bar	Quick connector	Permanent	
	Way of fastening wheel to construction:	YES 3	YES 4	NO	
	Vertical adjustment (number of fixing positions):	YES 4	NO	NO	
	Horizontal adjustment (number of fixing positions):	NO	0,0°	--	
Castor wheels	Inclination angle:	141 mm	587 mm	98 mm	
	Ø of wheel:	37 mm	Plastic	Aluminium	
	Material of ring of a wheel:	Aluminium	Steel	Unfolding	
	Folding/unfolding:	Unfolding	Unfolding	NO	
Backrest	Adjustment of axis inclination angle:	YES	YES	NO	
	Vertical adjustment (number of fixing positions)	YES 4	NO	NO	
	Horizontal adjustment (number of fixing positions):	NO	YES	NO	
	Backrest inclination adjustment	NO	NO	NO	
Tilt levers	One lateral:	NO	NO	NO	
	Two singular:	YES	NO	NO	
Push handles	Kind:	Two separate	Two separate	Two separate	
	Left:	YES	YES	YES	
Parking brake	Right:	YES	YES	YES	
	Kind:	Lever	Disc brake x 2	Aluminium	
Way of adjustment:	Material of lever:	Steel/Aluminium/Plastic	With screws	With screws and clamp stabilizing position of break towards tyre	
	Fastening to frame:	With screws	With screws	With screws and clamp stabilizing position of break towards tyre	
	Material:	Nylon	Nylon	Nylon	
	Colour:	Black	Black	Black	

NOTE. Measurements were made in the wheelchair with factory regulations (photo)

Legrests	Common for both legs:	YES
	Separate for each leg:	NO
	Stationary:	YES
	Folding:	NO
	Vertical adjustment (number of fixing positions)	YES
	Horizontal adjustment (number of fixing positions)	NO
	Angle adjustment (number of fixing positions)	NO
	Material of legrest:	Aluminum
	Seat belt	NO
Accessories	Anti-overflow device:	NO
	Anterior pelvic support:	YES
	Service :	YES

PHOTO OF WHEELCHAIR



NS

Tourer HD 20x4

2024-03-06

RPT20AASHD

160 kg

10°

CE MD

REHASENSE Sp. z o.o.

97-300 Piotrków Tryb.

Poland

5 907467 823119



Mechanical Laboratory of CBC						Report no.: CBC-027/2024		Page: 4 of 19	
TESTING									
NORMATIVE REFERENCES									
Applied		PN-EN ISO 21856:2023-01 Assistive products – General requirements and test methods							
YES		PN-EN 12183:2023-02 Manually propelled wheelchairs – Requirements and test methods							
NO		PN-EN 12184:2023-02 Electrically powered wheelchairs, scooters and their chargers–Requirements and test method							
YES		ISO 7176-1:2014 Wheelchairs – Determination of static stability							
YES		ISO 7176-2:2001 Wheelchairs – Determination of dynamic stability of electric wheelchairs							
YES		ISO 7176-3:2012 Wheelchairs – Determination of efficiency of brakes							
YES		ISO 7176-4:2008 Wheelchairs – Energy consumption of electric wheelchairs and scooters and determination of theoretical distance							
YES		ISO 7176-5:2008 Wheelchairs – Determination of overall dimensions, mass and turning space							
YES		ISO 7176-6:2001 Wheelchairs – Determination of maximum speed, acceleration and retardation of electric wheelchairs							
YES		wheelchairs							
NO		PN-ISO 7176-7:2001 Wheelchairs – Measurement of seating and wheel dimensions							
YES		ISO 7176-8:2014 Wheelchairs – Requirements and test methods for static, impact and fatigue strengths							
YES		ISO 7176-9:2009 Wheelchairs – Climatic test for electric wheelchairs							
YES		ISO 7176-10:2008 Wheelchairs – Determination of obstacle-climbing ability of electric wheelchairs							
NO		PN-ISO 7176-14:2001 Wheelchairs – Power and control systems for electric wheelchairs – Requirements and test methods							
NO		PN-ISO 7176-15: 2002 Wheelchairs – Requirements for informative disclosure, documentation and labelling							
NO		PN-EN 1021-1:2014-12 Furniture. Assessment of ignitability o upholstered furniture. Ignition source: smouldering cigarette.							
NO		PN-EN 1021-2:2014-12 Furniture. Assessment of the ignitability of upholstered furniture. Ignition source: match							
NO		Flame equivalent							
NO		PN-ISO 7176-16:2001 equivalent: PN-90/P-04823 Wheelchairs. Resistance to ignition of upholstered parts – Requirements and test methods							
NO		ISO 7176-16:2012 Wheelchairs. Resistance to ignition of upholstered parts – Requirements and test methods							
NO		PN-ISO 7176-19:2007 Wheelchairs. Wheeled mobility devices for use in motor vehicles							
RESULT OF MECHANICAL TESTS ACCORDING TO PN-EN ISO 21856:2023-01									
Requirement s according to clause	Test method according to clause	Checked characteristics/assemblies/parameters		Test result	Opinion	Comments			
4.1	4.8, 5.2, 5.4.2, 5.5, 6, 8.2.1, 9.4, 10, 22, 24 and EN 1441	Risk analysis		--	N/T				
4.2	V/I	Expected characteristics and technical documentation		Conf.	Pos.				
4.3	EN ISO 14155	Clinic assessment		--	N/T				
4.4	V/I	Technical support which can be dismantled		Conf.	Pos.				
4.5	V/I	Single use connections		Conf.	Pos.				
4.6	V/I	Boundary values of user weight		Conf.	Pos.				
4.7	V/I	Immoblilising means		Conf.	Pos.				
4.8	60601-1-6 62366-1:2015	Usability		--	N/A				
4.9	V/I	Design requirements in relation to persons with sensory and cognitive		--	N/T				
4.10	Annex C	Considerations for accessibility							
4.11	ISO 3746	Feedback		--	N/T				
		Materials							
5.1	EN 60601-1-9	Recycling		--	N/T				
5.2	V/I, B 5.2	Flammability (PN-EN 1021-1:2007)		--	N/T	NOTE 9			
5.2.2	V/I	Upholstered parts, mattresses, bed bases bedding and textiles		--	N/A				
5.2.3		Polymeric parts		--	N/A				
5.2.4		Electrical components		--	N/A				
5.2.5		Wiring		--	N/A				
5.3	EN ISO 10993-1 Annex. B	Biocompatibility and toxicity		--	N/T				

Requirement s according to clause	Test method according to clause	Checked characteristics/assemblies/parameters			Test result	Opinion	Comments
5.4	V/I	Contaminants and residues			—	N/A	
5.5	V/I,B.5.5.1	Microbiological infections and contamination	Cleaning	Conf.	Pos.		Comments in service manual
	Disinfection		—	N/A			
	Animal tissue		—	N/A			
5.6	EN ISO 9227	Resistance to corrosion			—	N/T	
6	Emitted sound and vibration						
6.1	EN ISO 3746 A6.1	Noise and vibration			—	N/T	
6.2	EN ISO 3746	Sound levels and frequencies of audible warning devices			—	N/T	
7	EN 60601-1-2 A.7	Electromagnetic compatibility			—	N/T	
8		Electrical safety			—	N/T	
9	V/I	Overflow, spillage, leakage, and ingress of liquids			—	N/A	
10	V/I. Measur.	Surface temperature			—	N/A	■ requirement does not concern heat of direct solar radiation ■ requirement concerns only persons with insensitiveness of skin (who do not feel heat)
11	V/I	Sterility			—	N/A	
12	V/I. Measur.	Safety of moving parts			Conf.	Pos.	Comments in service manual
13	V/I. Measur.	Means to prevent falling out			—	N/A	
14	V/I. Measur.	Prevention of traps for parts of the human body			Conf.	Pos.	Comments in service manual
14.1	V/I. Measur.	Holes and clearances			Conf.	Pos.	Comments in service manual
14.2	V/I. Measur.	V-shaped openings			Conf.	Pos.	Comments in service manual
15	V/I.	Folding and locking mechanisma			Conf.	Pos.	Comments in service manual
15.2	V/I.	Locking mechanisms			Conf.	Pos.	Comments in service manual
15.3	V/I.	Prevention of trap and squeeze hazard			Conf.	Pos.	Comments in service manual
16	V/I. Measur.	Carrying handles			Conf.	Pos.	Comments in service manual
17	V/I. Measur.	Assistive products that support or suspend users			Conf.	Pos.	PN-ISO 7176-8:2014 were tested by
17.4	V/I. Measur.	Tips			—	N/A	
18	V/I. Measur.	Portable and mobile assistive products			—	N/A	PN-ISO 7176-8:2014 were tested by
19	V/I, B 18	Surfaces, corners, edges and protruding parts			Conf.	Pos.	
20	A 20	Hand-held assistive products			—	N/A	
21	V/I	Small Parts			Conf.	Pos.	Comments in service manual
22	V/I. Measur. EN 60601-1	Stability			—	N/R	ISO 7176-1:2014 were tested by
23	A 23, V/I	Forces in soft tissues of the human body			Conf.	Pos.	
24	V/I. EN 614-1	Ergonomic principles			—	N/T	The requirements relate to the design process
Requirement s according to clause	Test method according to clause	Checked characteristics/assemblies/parameters			Test result	Opinion	Comments
25	V/I	Requirements for information supplied by the manufacturer			—	N/T	
25.2	V/I	Instructions for use			—	N/T	
25.2.2	V/I	Pre-sale information			—	N/T	
	V/I	a) information on how to obtain the user information in a format appropriate for use by people with visual, reading or cognitive disabilities			—	N/T	

Requirement s according to clause	Test method according to clause	Checked characteristics/assemblies/parameters	Test result	Opinion	Comments
	V/I	b) as far as possible, a description of the intended use, the intended user group and the intended environment	--	N/T	
	V/I	c) maximum and minimum user mass and maximum load	--	N/T	
	V/I	d) maintenance instructions, if applicable	--	N/T	
	V/I	e) if an assistive product is intended to be cleaned, a description of the method and suitable cleaning materials, including precautions needed to avoid corrosion, if applicable	--	N/T	
	V/I	f) if an assistive product is intended to be disinfected, a description of the method and suitable materials, including any precautions needed to avoid corrosion, if applicable	--	N/T	
	V/I	g) the overall dimensions of the assistive product, expressed in mm, and its mass, expressed in kg, when it is ready for use and, if applicable, when it is folded or dismantled	--	N/T	
	V/I	h) if the assistive product can be dismantled or has any removable parts, the mass expressed in kg, of each part that has a mass of more than 10 kg	--	N/T	
	V/I	i) if the assistive product is supposed to be used in combination with other products, the manufacturer shall state to which products, and how this can be done in a safe way	--	N/T	
	V/I	j) warning about dangerous combinations of devices and combinations of flame resistant and non-flameresistant material	--	N/T	
	V/I	k) a list of accessories, detachable parts and materials that the manufacturer has determined as being intended for use with the assistive product	--	N/T	
	V/I	l) if a programmable controller is fitted, information on the method of programming, the competence required to carry out the programming and the effects on performance	--	N/T	
	V/I	m) operator control adjustments	--	N/T	
	V/I	n) whether and how the assistive product can be folded or dismantled to assist in storage or transport	--	N/T	
	V/I	o) instructions regarding transport of the assistive product	--	N/T	
	V/I	p) measured sound power level	--	N/T	
25.2.3	V/I	User information	--	N/T	
	V/I	a) the location and the type of identification number/word on the assistive product shall be given for the unique identification number of the assistive product	--	N/T	
	V/I	b) the intended user	--	N/T	
	V/I	c) any adjustment or settings required before the assistive product can be used and information on how adjustments or settings affect the assistive product	--	N/T	
	V/I	d) information on adjustment possibilities and the competence required to carry out these adjustments	--	N/T	
	V/I	e) instructions on operation of all controls	--	N/T	
	V/I	f) the battery type and nominal voltage	--	N/T	
	V/I	g) instructions for battery maintenance	--	N/T	
	V/I	h) instructions for operating the battery charger, including warnings regarding any potential safety hazards	--	N/T	
	V/I	i) instructions on dismantling and re-assembly of the assistive product or any removable parts	--	N/T	
	V/I	j) the positions of points where the component parts can be gripped for safe moving and handling and/or a method for handling during dismantling, assembly or carrying	--	N/T	
	V/I	k) a warning if surface temperatures can increase / decrease when exposed to external sources of heat or cold	--	N/T	

Requirement s according to clause	Test method according to clause	Checked characteristics/assemblies/parameters	Test result	Opinion	Comments
25.2.4	V/I	Service information	--	N/T	
	V/I	l) a warning if the assistive product might disturb the operation of devices in its environment that emit electromagnetic fields	--	N/T	
	V/I	m) a warning if the performance of the assistive product can be influenced by electro-magnetic fields	--	N/T	
	V/I	n) if the intended purpose of an assistive product cannot be met without a hazard, a warning and instructions on how to operate the assistive product safely	--	N/T	
	V/I	o) if the intended purpose of an assistive product cannot be met without a hazard due to moving parts such as squeezing, a warning and instructions on how to operate the assistive product safely	--	N/T	
	V/I	p) the level of resistance to ignition of materials and assemblies	--	N/T	
	V/I	q) information on the recycling of used batteries and other parts of the assistive product	--	N/T	
	V/I	r) expected lifetime of the assistive product	--	N/T	
25.3	V/I	Labeling	--	N/T	
	V/I	a) name and address of the manufacturer and, in addition, name and address of the supplier if different from the manufacturer	--	N/T	
	V/I	b) model definition	--	N/T	
	V/I	c) lot or batch and/or serial number	--	N/T	
	V/I	d) year and month of manufacture	--	N/T	
	V/I	e) Unique Device Identification	--	N/T	
	V/I	f) electrical details in accordance with IEC 60601-1:2005+AMD1:2012+AMD2:2020	--	N/T	
	V/I	g) product IP rating	--	N/T	
	V/I	h) details of any other energy source used	--	N/T	
	V/I	i) maximum and minimum user mass	--	N/T	
	V/I	j) maximum load	--	N/T	
	V/I	k) assistive products and detachable parts with a mass of more than 10 kg, shall be marked with an appropriate symbol (fig. 5)	--	N/T	
26	V/I A26	Packaging	--	N/T	
TEST RESULTS ACCORDING TO PN-EN 12184:2023-02					
7 WHEELCHAIR PERFORMANCE					
Requirement s according to clause	Test method according to clause	Checked characteristics/assemblies/parameters	Test result	Opinion	Comments
8		Driving characteristics			
8.1.1		Meeting the requirements of the table 3 and 4	Conf.	Pos.	
8.1.2	8.1.2.2	Ability to climb rated slope	3° Conf.	Pos.	Tab.3 (cl.A β≥3°)
8.1.3.2	8.1.3.3	Ground unevenness	Conf.	Pos.	3 support points
8.1.4.1	8.1.4.2	Maximum downhill speed	Conf.	Pos.	≤ 125% V _{max}
8.1.5.1	8.1.5.2	Dynamic stability	3° Conf.	Pos.	Tab.3 (cl.A β≥3°)
8.1.6.1	8.1.6.2	Obstacle climbing and descending	50 mm Conf.	Pos.	(cl.A h≥50mm) (cl.B h≥50mm)

Require ments according to clause	Test method according to clause	Checked characteristics/assemblies/parameters	Test result	Opinion	Comments
8.1.7.1	8.1.7.2 ISO1716-1	Static stability	Conf.	Pos.	Tab. 3 (cl.A β26°) Tab. 3 (cl.B β29°)
8.1.8.1	8.1.8.2 ISO1716-6	Maximum speed	Conf.	Pos.	
8.1.9.1	8.1.9.2 ISO1716-4	Distance range	Conf.	Pos.	
8.2.1	8.2.2 ISO1716-8	Static, impact and fatigue strength	Conf.	Pos.	
8.3	ISO1716-19	Wheelchairs for use as seats in motor vehicles	—	N/T	
8.4	ISO1716-9	Climatic performance	Conf.	Pos.	
9		Component properties			
9.1.1	9.1.2.1	Foot supports, lower leg support assemblies and arm supports	—	N/A	
		Possibility to position the occupant's feet at the required height	—	N/A	
		Presence of the technical means to prevent the occupant's feet from sliding	—	N/A	
		Foot supports, lower leg support assemblies and arm supports should:	—	N/A	
		-Incorporate a means to locate it securely in any intended operating position	—	N/A	
		-Be adjustable in increments not exceeding 25mm	—	N/A	
		-Be accessible and operable by the occupant or an assistant or both in accordance with the	—	N/A	
		manufacturer's intended use of the wheelchair	—	N/A	
		-Be within the reach space shown in Figure 1	—	N/A	
		-Be operable without the use of tools	—	N/A	
		-Means to prevent the occupant's feet from sliding into the gap shall be provided, or	—	N/A	
		-The gap between the footrests ≤35mm for adults and ≤25mm for children	—	N/A	
9.2	Measur. V/I	Component mass			
		Presence of the handling devices (e.g. handles) in components of mass	—	N/O	Required for wheelchairs intended to be dismantled for storage or transportation
		greater than 10 kg, or			
		Information indicating the points where components can be lifted and			
		describing how they shall be handled during disassembly, lifting,	Conf.	Pos.	mass of the heaviest parts 39,0 kg
9.3	V/I	Pneumatic tyres			
		Presence of the same type of valve connection on all tyres	Conf.	Pos.	
		Valves should be readily accessible when using the intended inflating tool.	Conf.	Pos.	
		Presence of the marking of the tyres or the rims with the maximum pressure in kPa,	Conf.	Pos.	
		bar or PSI			
9.4	EN 1021-1	Means for maintaining a sitting posture	—	N/A	
9.5.1	EN 1021-2	Resistance to ignition of upholstered composition parts	—	N/T	
9.5.1		Resistance to ignition of foam materials	—	N/T	
9.5.1		Resistance to ignition of other parts	—	N/T	
9.5.3	ISO1716-14	Power and control systems	—	N/T	
10	ISO14971	PROPELSION AND BRAKING SYSTEM			
10.1.1	V/I, Meas.	Means for operating brake	Conf.	Pos.	
		Means for operating brakes shall:			
		-be accessible and operable by the occupant or an assistant or both in accordance with the	Conf.	Pos.	
		manufacturer's intended use of the wheelchair			
		-be within the reach space shown in Figure 1, if the wheelchair is intended to be operated by the	Conf.	Pos.	
		occupant			
		-be within the reach space shown in Figure 2, if the wheelchair is intended to be operated solely by	—	N/A	
		an assistant			
		-have operating forces for engaging and disengaging that do not exceed those stated in Table 3 when	Conf.	Pos.	
		tested in accordance with 10.1.2			
		If one or more brake levers are fitted to a wheelchair in the form used on bicycles and			
		mopeds:			
		-for wheelchairs with a maximum occupant mass not greater than 150 kg, the force applied to each	Conf.	Pos.	
		lever to hold the loaded wheelchair stationary on the rated slope shall not exceed 60 N			
		-for wheelchairs with a maximum occupant mass greater than 150 kg, the force applied to each	Conf.	Pos.	
		lever to hold the loaded wheelchair stationary on the rated slope should not exceed 60 N			
10.1.1	V/I	Means for releasing parking brakes shall be protected against activation caused by accidental	Conf.	Pos.	
		contact			
		-the handgrip width of such brake levers when no force is applied, measured 15 mm from the end of	Conf.	Pos.	
		the brake lever, shall not be greater than 100 mm and should not be greater than 80 mm			
		(see Figure 3).			
		- Means for releasing parking brakes shall be protected against activation caused by accidental	Conf.	Pos.	
		contact			

10.2.1	10.2.2.1	Braking functions	10.2.2.2 10.2.2.3 10.2.2.4	ISO7176-3	a) The wheelchair shall have 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	Conf.	Pos.		b) The wheelchair shall have a running brake which, when operated after the wheelchair has been put into freewheel mode, shall bring the wheelchair to a stop	Conf.	Pos.		c) The risk management process shall address risks due to loss of braking if a wheel loses contact with the ground	Conf.	Pos.		d) The wheelchair shall have 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 (e.g. spring loaded disc brake)	—	N/T		e) The wheelchair shall have a parking brake which operates independently of tyre wear and tyre inflation pressure (e.g. drum brake in wheels, spring loaded disc brake)	Conf.	Pos.		f) Parking brakes shall meet the parking brake effectiveness requirement in Table 3 when tested in accordance with 10.2.2.2	Conf.	Pos.		g) Parking brakes shall be operable when there is no power from the battery supplying the drive system	Conf.	Pos.		h) Parking brakes shall be operable when the wheelchair is in freewheel mode	Conf.	Pos.		i) If they are subject to wear, parking brakes shall have provision for adjustment and/or replacement as specified by the manufacturer	Conf.	Pos.		j) If the wheelchair is fitted with arm supports that can be moved or removed to enable transfer, when tested in accordance with 10.2.2.3, engaged parking brakes shall not have parts that protrude above the level of the occupied seat	—	N/A		k) When parking brakes are tested in accordance with 10.2.2.4, no parking brake mechanism shall move from the pre-set position and no component or assembly of parts shall show visible signs of cracks, breakages, gross deformations, free play, loss of adjustment or any other damage that adversely affects the function of the wheelchair	Conf.	Pos.		l) Following testing of the parking brake in accordance with 10.2.2.4, parking brakes shall meet the parking brake effectiveness requirement in Table 1 when tested again in accordance with 10.2.2.2	Conf.	Pos.		10.3	V/I, Meas	Freewheel device	The wheelchair shall be fitted with a freewheel device that shall:	—	N/T	—	be accessible and operable by the occupant or an assistant or both in accordance with the manufacturer's intended use of the wheelchair	—	N/T	—	be within the reach space shown in Figure 1, if the wheelchair is intended to be operated by the occupant	—	N/T	—	be within the reach space shown in Figure 2, if the wheelchair is intended to be operated solely by an assistant	—	N/T	—	have operating forces for engaging and disengaging that do not exceed those stated in Table 3	—	N/T	—	be operable without detaching any parts	—	N/T	—	not depend on the battery power supplying the motor drive system	—	N/T	—	have two defined positions including clear indication of freewheel mode and drive mode	—	N/T	—	prevent use of the wheelchair's drive system, if the freewheel device is activated.	Conf. Pos.	N/T	Operations intended to be carried out by the occupant and/or assistant	Conf. Pos.	N/T	Controls intended for operation by the occupant	Conf. Pos.	N/A	Controls intended for operation by an assistant	—	N/A	Assistant control unit, push handles and handgrips	11.4.2	11.5.2	Operating forces	11.6.1	11.6.2	Seating adjustments for tilt and recline systems	NOTE: required warning and/or mechanism precluding seating adjustment while the occupant is seating	—	N/A	Controls for seating adjustments intended to be operated by the occupant shall be accessible to the occupant from all seating positions	12	Electrical systems	General requirements	7176-14.21 60601-1	12.1	V/I, Meas.	7176-14 EN 60529 EN 60335-1	12.3	Battery chargers	—	N/T	Circuit protection	—	N/T	Battery enclosures and containers	V/I	12.5	Emergency stop	7176-14	12.6	Lighting	2006/42/WE 76/756/EEG 97/28/WE	12.7	Switching off while driving	7176-14	12.8	Software	EN 62304	12.9	Lithium cells and batteries	EN 62133-2	12.10	Remote control	12.11
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Require ments accordin g to clause	Test method accordin g to clause	Checked characteristics/assemblies/parameters	Test result	Opini on	Comm ents
13	V/I	Information supplied by the manufacturer			
		Information and marking conforming PN-EN ISO 21856 available		N/T	
		Information and marking conforming EN ISO 20417:2021 available		N/T	
13.2		Pre-sale information available		N/T	
13.3		User information available		N/T	
13.4		Service information available		N/T	
12184	V/I	Instructions for use			
13.2		Pre-sale Information			
		a) information on how to obtain the user information in a format appropriate for use by visually impaired people		N/T	
		b) a description of the intended occupant of the wheelchair, including the occupant's mass		N/T	
		c) the intended operator (occupant, assistant or both), intended use and the intended environment		N/T	
		d) the type class of the wheelchair: Class A, B or C		N/T	
		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		N/T	
		f) the minimum width of corridor in which the wheelchair can be turned to face the opposite direction		N/T	
		g) the rated slope, expressed in degrees		N/T	
		h) the standard options that are available for the wheelchair		N/T	
		i) if the wheelchair can be dismantled or has any removable parts, the mass of the heaviest part		N/T	
		j) a statement that the wheelchair is intended to be used as a seat in a motor vehicle, or a warning that the wheelchair is not intended to be used as a seat in a motor vehicle		N/T	
		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.		N/T	
		l) the maximum height of kerb which the wheelchair can descend safely		N/T	
		m) if a programmable controller is fitted, information on the method of programming, the competence required to carry out the programming and the effects on performance		N/T	
12184	V/I	User information			
13.3		User information shall be provided by the manufacturer with each wheelchair. Further copies shall also be available for any subsequent user of the wheelchair. User information shall contain the following where applicable		N/T	
		a) the location and the type of identification number/word on the assistive product shall be given for the unique identification number of the assistive product		N/T	
		b) any adjustment or settings required before the assistive product can be used and information on how adjustments or settings affect the assistive product		N/T	
		c) information on any adjustments that can be made, and the competency required to carry out these adjustments		N/T	
		d) instructions on operation of all controls, including brakes		N/T	
		e) instructions on how to engage and disengage the drive system		N/T	
		f) the wheelchair manufacturer's recommended tyre pressure(s), expressed in kPa, bar, or PSI		N/T	
		g) instructions for dealing with tyre punctures		N/T	
		h) the battery type and nominal voltage		N/T	
		i) instructions for battery maintenance		N/T	
		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);		N/T	
		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		N/T	
		l) instructions on whether and how the wheelchair can be folded to assist in storage or transport		N/T	
		m) instructions on dismantling and re-assembly of the assistive product or any removable parts;		N/T	

12184	13.3	V/I	n) instructions regarding transport of the assistive product (e.g. in a car or aeroplane)	—	N/T
			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	—	N/T
			p) if the manufacturer specifies that the wheelchair is not intended for use in the motor vehicle, a warning to that effect,	—	N/T
			q) instructions on how to use the means for maintaining a sitting posture and the circumstances in which it should be used	—	N/T
			r) instructions on how to obtain and fit the means for maintaining a sitting posture if it is not supplied with the wheelchair	—	N/T
			s) the positions of points intended to carry additional loads	—	N/T
			t) instructions for preparing the wheelchair for long-term storage, and for preparing it for use afterward	—	N/T
			u) warning that the wheelchair can disturb the operation of devices in its environment that emit electromagnetic fields	—	N/T
			v) a warning that the driving performance of the wheelchair can be influenced by electromagnetic fields	—	N/T
			w) a warning that the stopping distance on slopes can be significantly greater than on level ground	—	N/T
			x) information on the recycling of used batteries and of the wheelchair	—	N/T
			y) if the characteristics of the wheelchair exceed the limits specified in Appendix M of Commission Regulation, a statement to that effect	—	N/T
			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	—	N/T
			aa) the expected service life of the wheelchair	—	N/T
			bb) information on how to get repairs and servicing	—	N/T
			cc) warranty information	—	N/T
12184	13.4	V/I	The service information shall contain instructions necessary for the maintenance, adjustment and repair of the wheelchair and for the replacement of parts	—	N/T
13.5	V/I	Labelling	The manufacturer shall apply permanent labelling for the following	—	N/T
			- 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	—	N/T
			- 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	—	N/T
			- 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	—	N/T
			- for wheelchairs not intended to be used as a seat in a motor vehicle, a warning to that effect	—	N/T
			- for Class A wheelchairs not intended for use outdoors, a warning to that effect	—	N/T
TEST RESULTS according to ISO 7176-1					
Require ments according to clause	Test method according to clause	Checked characteristics/assemblies/parameters	Test result	Opinion	Comments
12184 PN-EN	10.	Static stability of wheelchair facing up to the slope (backwards) – <i>factory regulations</i> *)	19 °	Pos.	Tab. 3 (c1A $\beta \geq 6^\circ$) Tab. 3 (c1B $\beta \geq 9^\circ$) Tab. 3 (c1C $\beta \geq 15^\circ$)
	8.	Static stability of wheelchair positioned backwards up to the slope – <i>factory regulations</i> *)	32 °	Pos.	
	12.	Static stability of wheelchair positioned sideward up to the slope	15 °	Pos.	
*) Measurements were made in the wheelchair with factory regulations (photo)					
TEST RESULTS according to ISO 7176-2					
Require ments according to clause	Test method according to clause	Checked characteristics/assemblies/parameters	Test result	Opinion	Comments
4.	7.1.	Stability during start and stop when wheelchair drives forwards up to the slope	3,0°	Pos.	Tab. 3
4.	7.2.	Force required to operate hand (or foot) steering mechanism	15 N	Pos.	CI.A ($\beta \geq 3^\circ$) CI.B ($\beta \geq 6^\circ$) NITE 7
4.	7.3.	Stability of braking during drive forwards and backwards down the slope	3,0°	Pos.	
4.	7.3.	Stability during turning	3,0°	Pos.	

TEST RESULTS according to ISO 7176-3

Require accordin g to clause	PN-EN 12184 10.2.1.c Measur. Tab. 1	PN-EN 12184 7.1, V/I Tab. 1	PN-EN 12184 Measur. Tab. 1	PN-EN 12184 7.1, V/I Measur. Tab. 1	PN-EN 12184 10.2.1.c Measur. Tab. 1	PN-EN 12184 10.1.1.4 Tab. 1	17
Test method according to clause	PN-EN 12184 10.2.2.2 Tab. 1	PN-EN 12184 10.2.2.2 Tab. 1	PN-EN 12184 10.2.2.2 Tab. 1	PN-EN 12184 10.2.2.2 Tab. 1	PN-EN 12184 10.2.2.2 Tab. 1	PN-EN 12184 10.1.1.4 Tab. 1	18
Checked characteristics/assemblies/parameters	Test result	Opinion	Comments	Effectiveness of parking brake of wheelchair positioned forwards down the slope	Effectiveness of parking brake of wheelchair positioned backwards down the slope	Measurement of force acting on brake lever	19
				Conf. 28,0° wheelchair slides down	Conf. 13,0° wheelchair slides down	60 N	20
				Pos.	Pos.	Pos.	21
				≥ 6° (Cl. A) ≥ 9° (Cl. B) ≥ 15° (Cl. C) Tab. 3 PN-EN 12184			22

NOTE: Measurements were made in the wheelchair with factory regulations (photo)

Require ments accordi ng to clause	Test method according to clause	Checked characteristics/assemblies/parameters	Test result	Opinio n	Comments
7.2.1.a	Measur. V/I	Braking distance during drive with maximum speed forwards on horizontal plane ($V_{max}=15,0\text{km/h}$)	4,2 m	Pos.	
7.2.1.b	Measur. V/I	Braking distance during drive backwards on horizontal plane ($V_{max}=5,0\text{km/h}$)	0,5 m	N/A	
7.2.1.c	Measur. V/I	Braking distance of wheelchair during drive forwards on slope of 5°	5,0 m	N/A	
7.2.2.	Measur. V/I	Resistance of braking system to increased temperature caused by long braking during drive forwards on horizontal plane	Conf.	Pos..	
7.2.3.a	Measur. V/I	Automatic Braking distance of wheelchair during drive with maximum speed forwards on horizontal slope	—	N/T	
7.2.3.b	Measur. V/I	Brake Braking distance of wheelchair during drive with maximum speed forwards on slope of 5°	—	N/T	
TEST RESULTS according to ISO 7176-4					

TEST RESULTS according to ISO 7176-4

Require ments accordin g to clause	Test method according to clause	Checked characteristics/assemblies/parameters	Test result	Opinion	Comments
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NOTE: Range wheelchair was tested in road conditions. The average range of 5 attempts - 70,0 km (2 x 35,0 km)

TEST RESULTS according to ISO 7176-5

Test method according to clause	Checked characteristics/assemblies/parameters	Test result wheelchair	Wheelchair + electric drive	*) Electric drive	Opinion
8.2	Overall length of wheelchair with legrest and footrest	1040 mm	1650 mm	970 mm	N/R.
8.3	Overall width	850 mm	850 mm	707 mm	N/R.
8.4	Height of grips above the ground	925 mm	915 mm	810 mm	N/R.
8.5	Minimum length of folded wheelchair	1040 mm	N/A	—	N/R.
8.6	Minimum overall width of folded wheelchair	850 mm	N/A	—	N/R.
8.7	Minimum height of folded wheelchair	920 mm	N/A	—	N/R.
8.8	Castor wheels lift height in the wheelchair with anti- overturn device	N/A	N/A	N/A	N/R.
8.9	Mass	20,1 kg	59,1 kg	39,0 kg	N/R.
8.10	Mass of the heaviest parts	14,9 kg	—	—	N/R.
8.11	Pivot width (fig. 9)	1120 mm	1650 mm	—	N/R.
8.12	Width of U-turn limited by spacing of walls	1400 mm	1900 mm	—	N/R.
8.13	Diameter of the rotation (fig. C3)	1500 mm	2500 mm	—	N/R.

Test method according to clause	Checked characteristics/assemblies/parameters	Test result	Wheelchair + electric drive	*) Electric drive	Opinion
8.14	Ground clearance (fig. 5)	230 mm	100 mm	--	N/R.
8.15	Required width of angled corridor (fig. 15)	980 mm	1100 mm	--	N/R.
8.16	Required doorway entry depth (fig. 14)	N/A **)	N/A **)	--	N/R.
8.17	Required corridor width for side opening (fig. 13)	N/A **)	N/A **)	--	N/R.

According to PN-EN 12183 Annex A and PN-ISO 7193 recommended max overall dimensions: length: 1200mm, width: 700mm, height: 1200mm
 *) Electric drive for a wheelchair standing, supported on supports **) Wheelchair width > 800 mm

Test method according to clause	Checked characteristics/assemblies/parameters	Test result	Opinion	Comments
7.1.	Maximum speed during drive forwards	15,0km/h	Pos.	
7.2.	Maximum speed during drive backwards	5,0 km/h	Pos.	
8.1.	Maximum acceleration	0,64 m/s ²	N/R	
8.2.	Maximum deceleration	2,07 m/s ²	Pos.	

Test method according to clause	Checked characteristics/assemblies/parameters	Test result	Opinion	Comments
7.3.2.	Angle of seat plane	--	N/T	
7.3.3.	Effective depth of seat	--	N/T	
7.3.4.	Width of seat	--	N/T	
7.3.5.	Effective width of seat	--	N/T	
7.3.6.	Height of front edge of seat plane	--	N/T	
7.3.7.	Angle of backrest	--	N/T	
7.3.8.	Height of backrest	--	N/T	
7.3.9.	Width of backrest	--	N/T	
7.3.10.	Moving forward of headrest	--	N/T	
7.3.11.	Height of headrest over the seat	--	N/T	
7.3.12.	Distance of footrest from seat	--	N/T	
7.3.13.	Clearance of footrest	--	N/T	
7.3.14.	Length of footrest	--	N/T	
7.3.15.	Angle of footrest	--	N/T	
7.3.16.	Angle of legrest	--	N/T	
7.3.17.	Height of armrests	--	N/T	
7.3.18.	Moving forward of armrests	--	N/T	
7.3.19.	Length of armrests	--	N/T	
7.3.20.	Width of armrests	--	N/T	
7.3.21.	Angle of armrests	--	N/T	
7.3.22.	Distance between armrests	--	N/T	
7.3.23.	Position of the front of armrests	--	N/T	
7.3.24.	Diameter of drive wheel	--	N/T	
7.3.25.	Diameter of driving wheel	--	N/T	
7.3.26.	Displacement of wheel axis horizontally	--	N/T	
7.3.27.	Displacement of wheel axis vertically	--	N/T	
7.3.28.	Diameter of castor/front wheel	--	N/T	

NOTE 1: Measurements were made in the wheelchair with factory regulations (photo), (refer to ISO 7176-5, PN-ISO 7176-7)
 NOTE 2: Measurements were made burdening the wheelchair with dummy RLK – refers to PN-ISO 7176-7

Require ments according to clause	Test method according to clause	Checked characteristics/assemblies/parameters	Test result	Opinion	Comments
4.	8.4.	Armrest – resistance to forces acting downwards	--	N/T	
4.	8.5.	Footrests - resistance to forces acting upwards	--	N/T	
4.	8.6.	Anti-tip levers	--	N/A	
4.	8.7.	Grips	--	N/A	
4.	8.8.	Armrest – forces acting upwards	--	N/T	
4.	8.9.	Footrest – forces acting upwards	--	N/T	
4.	8.10.	Handle grips for pushing – load acting upwards	--	N/T	
4.	8.11.	Scooter steering handles: Resistance to forward forces	Conf.	Pos.	loading 2x 450N

Requirem ents accordin g to clause	Test method according to clause	Checked characteristics/assemblies/parameters	Test result	Opinion	Comments
4.	8.12.	Scooter steering handles: Resistance to rearward forces	Conf.	Pos.	loading 2 x 450N
4.	8.13.	Scooter steering handles: Resistance to downward forces	Conf.	Pos.	loading 952 N
4.	8.14.	Scooter steering handles: Resistance to upward forces	Conf.	Pos.	loading 952 N
4.	9.3.	Backrest – impact strength	–	N/T	
4.	9.4.	Driving wheel – impact strength	–	N/A	
4.	9.5.	Castor/front wheel – impact strength	Conf.	Pos.	10kg pendulum impact
4.	9.6.3.	Footrest – side impact	–	N/T	
4.	9.6.4.	Footrest – in-line impact	–	N/T	
4.	9.7.1.	Upward impacts on anti-tip devices	–	N/A	
4.	9.7.2.	Forward or rearward impacts on anti-tip devices	–	N/A	
4.	9.7.3.	Lateral impacts on anti-tip devices	–	N/A	
4.	10.3.2.	Testing of manually propelled wheelchair on two-drum machine $h=6mm \rightarrow M \leq 75kg, h=9mm \rightarrow 100kg \leq M < 75kg, h=12mm \rightarrow M > 100kg$	–	N/A	
4.	10.3.3.	Measurement of initial current for electrically powered wheelchair $h=6mm \rightarrow M \leq 75kg, h=9mm \rightarrow 100kg \leq M < 75kg, h=12mm \rightarrow M > 100kg$	–	N/R	
4.	10.3.4.	Testing of electrically powered wheelchair on two-drum machine $h=6mm \rightarrow M \leq 75kg, h=9mm \rightarrow 100kg \leq M < 75kg, h=12mm \rightarrow M > 100kg$	Conf.	Pos.	200 000 of cycles with full loading of wheelchair (160kg)
4.	10.4.	Drop testing	Conf.	Pos.	6666 drops of wheelchair with full loading (160kg) from height of 50mm
4.	10.5.	Fatigue test of manually operated parking brakes	Conf.	Pos.	60 000 cycles

UWAGA: Dia p. 9.5 - $kgf \theta = 50^\circ$

TEST RESULTS according to ISO 7176 –9

Requirem ents accordin g to clause	Test method according to clause	Checked characteristics/assemblies/parameters	Test result	Opinion	Comments
8	7.3	Water resistance	Conf.	Pos.	

TEST RESULTS according to ISO 7176 –10 (NOTE 8)

Requirem ents accordin g to clause	Test method according to clause	Checked characteristics/assemblies/parameters	Test result	Opinion	Comments
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PN-EN 12184:20 14 Tab. 2	7.1.	Driving forward when the wheels contact an obstacle (drive onto an obstacle)	Conf. cl.B	Pos.	Tab. 1 (cl.A $h \geq 15mm$) (cl.B $h \geq 50mm$)
	7.2.	Driving forward from a distance of 500mm from the obstacle (drive onto an obstacle)	Conf. cl.B	Pos.	
	7.3.	Driving backwards when the wheels contact an obstacle. (drive onto an obstacle)	Conf. cl.B	Pos.	
	7.4.	Driving backwards from a distance of 500mm from the obstacle (drive onto an obstacle)	Conf. cl.B	Pos.	
	7.5.	Riding off an obstacle while driving forward (downhill from an obstacle)	Conf. cl.B	Pos.	
	7.6.	Driving backwards from an obstacle (downhill from an obstacle).	Conf. cl.B	Pos.	

TEST RESULTS according to PN-ISO 7176 –14

Requirem ents accordin g to clause	Test method according to clause	Checked characteristics/assemblies/parameters	Test result	Opinion	Comments
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NOTE. Testing concerns electrically propelled wheelchairs – performed by Electrotechnical Laboratory



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TEST RESULTS according to PN-ISO 7176-15									
Require ments accordin g to clause	Test method according to clause	Checked characteristics/assemblies/parameters	Test result	Opin ion	Comments				
7.3		Content of service manual	—	N/T					
7.3.a	V/I	Data concerning guarantee	—	N/T					
7.3.b	V/I	General characteristics:	—	N/T					
7.3.b		- description of wheelchair with photos or drawings and description of utilization	—	N/T					
		- description of user with maximum mass stated	—	N/T					
		- description of environment of intended utilization	—	N/T					
		- value of recommended pressure in pneumatic tyres	—	N/T					
7.3.c	V/I	When wheelchair is sold in elements for individual assembly	—	N/T					
7.3.c		- list of components	—	N/T					
		- information on tools necessary to fold wheelchair	—	N/T					
		- instruction of bringing lacking or damaged parts	—	N/T					
		- assembly, installation and disassembly instruction of parts delivered by manufacturer	—	N/T					
		- instructions for preparing wheelchair to storage, transport	—	N/T					
7.3.d	V/I	Service manual of wheelchair	—	N/T					
7.3.d		- use of wheelchair on surfaces where user moves	—	N/T					
		- get on and get off wheelchair	—	N/T					
		- illustrations explaining these instructions	—	N/T					
		- Descriptions of feasible improper use of wheelchair	—	N/T					
7.3.e	V/I	Maintenance instruction	—	N/T					
7.3.e		• Details of maintenance:	—	N/T					
		- service, maintenance/detection of damages, for which user is responsible	—	N/T					
		- tools necessary for repair and service of wheelchair	—	N/T					
		- maintenance frequency	—	N/T					
		- list of parts (with numbers) and way of its purchase	—	N/T					
7.3.f		• Ways of cleaning	—	N/T					
		• Elements intended to easy replacement:	—	N/T					
		- information on orders	—	N/T					
		- instruction of disassembly	—	N/T					
		- information on replacement and testing of parts	—	N/T					
7.3.f	V/I	Performing of parameters control	—	N/T					
		Checked characteristics/assemblies/parameters	Test result	Opin ion	Comments				
7.3.g	V/I	Repair of wheelchair	—	N/T					
7.3.g		- Identification of parts to be repaired by user	—	N/T					
		- Identification of parts operated by manufacturer or service to maintain guarantee	—	N/T					
		- Identification of parts removable and sent to manufacturer/service	—	N/T					
		- Conditions under which manufacturer/service is obliged to perform repair	—	N/T					
		- List of authorized service workshops	—	N/T					
		- Information if spare parts can be purchased	—	N/T					
		- Way of package and transport, if necessary	—	N/T					

Requirement according to clause	Test method according to clause	Checked characteristics/assemblies/parameters			Content of specification sheets of manufacturer
		Test result	Opinion	Comments	
Annex A	V/I	--	N/T		Manufacturer
Annex A	V/I	--	N/T		Address
Annex A	V/I	--	N/T		Model
Annex A	V/I	--	N/T		Maximum mass of user
Annex A	V/I	--	N/T		Overall length with legrest
Annex A	V/I	--	N/T		Overall width
Annex A	V/I	--	N/T		Length after assembly
Annex A	V/I	--	N/T		Width after assembly
Annex A	V/I	--	N/T		Height after assembly
Annex A	V/I	--	N/T		Total mass
Annex A	V/I	--	N/T		Mass of the heaviest part
Annex A	V/I	--	N/T		Static stability downhill
Annex A	V/I	--	N/T		Static stability uphill
Annex A	V/I	--	N/T		Side static stability
Annex A	V/I	--	N/T		Energy range
Annex A	V/I	--	N/T		Dynamic stability uphill
Annex A	V/I	--	N/T		Determination of obstacles
Annex A	V/I	--	N/T		Maximum speed forward
Annex A	V/I	--	N/T		Minimum braking distance at maximum speed
Annex A	V/I	--	N/T		Seat plane angle
Annex A	V/I	--	N/T		Effective depth of seat
Annex A	V/I	--	N/T		Effective width of seat
Annex A	V/I	--	N/T		Height of seat to front edge
Annex A	V/I	--	N/T		Backrest angle
Annex A	V/I	--	N/T		Height of backrest
Annex A	V/I	--	N/T		Distance of seat from footrest
Annex A	V/I	--	N/T		Angle between seat plane and legs
Annex A	V/I	--	N/T		Height of armrest from seat
Annex A	V/I	--	N/T		Distance of front part of armrest from rear rest
Annex A	V/I	--	N/T		Diameter of drive wheel
Annex A	V/I	--	N/T		Position of wheel axis horizontally
Annex A	V/I	--	N/T		Width of turning

Pos. – positive; Neg – negative; N/T – not tested; N/A – not applicable; N/R – not required, N/O – not occurred, V/I/- visual inspection, Conf.- conformed.

NOTE 1: During visual inspection before testing any visible defects that can have an effect on test results were not stated.

NOTE 2: Sample/object for testing was delivered to the Laboratory by the Orderer.

NOTE 3: Test dummy of mass 160 kg and person of required mass were used for testing.

NOTE 4: Environment temperature for testing - 19°C.

NOTE 6: A loaded wheelchair (110kg) on a ramp with a slope 3°, after driving a road of 5m uphill, it obtained a speed of 2,2 km/h (minimum 2 km/h required). Positive test result

NOTE 7: For class A wheelchair, dynamic stability was tested on a ramp with an incline of 3°.

• Dynamic stability in forward hill starts. Positive test result.

• Dynamic stability when braking forward when going uphill. Positive test result.

• Dynamic stability when braking forward when driving downhill. Positive test result.

• Dynamic stability when braking backwards when driving downhill. Positive test result.

• Dynamic stability when turning when driving on a ramp 3°. Positive test result.

NOTE 8: For class B wheelchair, the ability to negotiate obstacles with a height of 50mm was tested. (according to ISO 7176-10)

- cl. 7.1 Driving forward when the wheels contact an obstacle (drive onto an obstacle 50mm).
Positive test result.
- cl. 7.2 Driving forward from a distance of 500mm from the obstacle (drive onto an obstacle 50mm).
Positive test result.
- cl. 7.3 Driving backwards when the wheels contact an obstacle (drive onto an obstacle 50mm).
Positive test result.
- cl. 7.4 Driving backwards from a distance of 500mm from the obstacle (drive onto an obstacle 50mm).
Positive test result.
- cl. 7.5 Riding off an obstacle while driving forward (downhill from an obstacle 50mm).
Positive test result.
- cl. 7.6 Driving backwards from an obstacle (downhill from an obstacle 50mm).
Positive test result.

NOTE 9: The wheelchair drive is not equipped with a seat (fabric + filling).

Final assessment			
PN-EN ISO 21856:2023-01	Pos.	ISO 7176-8:2014	Pos.
PN-EN 12183:2023-02	N/A	ISO 7176-9:2009	Pos.
PN-EN 12184:2023-02	Pos.	ISO 7176-10:2008	Pos.
ISO 7176-1:2014	Pos.	PN-ISO 7176-14:2001	N/T
ISO 7176-2:2001	Pos.	PN-ISO 7176-15: 2002	N/T
ISO 7176-3:2012	Pos.	PN-EN 1021-1:2014-02	N/T
ISO 7176-4:2008	Pos.	PN-EN 1021-2:2014-02	N/T
ISO 7176-5:2008	Tested*	PN-ISO 7176-16:2001	N/T
ISO 7176-6:2001	Pos.	ISO 7176-16:2012	N/T
PN-ISO 7176-7:2001	N/T	PN-ISO 7176-19:2007	N/T

*) The standard does not specify requirements towards tested parameters of product

Note: Conformity assessment of product according to standard requirements refer to the scope of mechanical tests ordered by client, excluding testing of material biocompatibility with human body according to PN-EN ISO 10993-1:2010

PN-EN 12184:2023-02 - Tab. 3 Requirements and tests for driving characteristics of type classes

Driving characteristics	Test	Requirement Class			Test result Opinion
		A	B	C	
Rated slope	8.1.2.2	min. 3°	min. 6°	min. 10°	Cl. A
Dynamic stability	8.1.5.2	min. 3°	min. 6°	min. 10°	
- starting forwards uphill		min. 3°	min. 6°	min. 10°	
- stopping forwards uphill		min. 3°	min. 6°	min. 10°	
- stopping forwards downhill		min. 3°	min. 6°	min. 10°	
- stopping backwards downhill		min. 3°	min. 6°	min. 10°	
Static stability	8.1.7.2	min. 6°	min. 9°	min. 15°	
- all directions					Cl. A
Maximum operating forces					
Brake levers	10.1.2				
Freewheel lever and controls	11.5.2				
- single finger operation		5 N	5 N	5 N	
- more than one finger operation		13,5 N	13,5 N	13,5 N	
- whole hand operation		60 N	60 N	60 N	
- combined hand and arm operation		60 N	60 N	60 N	
- foot operation, pushing operation		100 N	100 N	100 N	
- foot operation, pulling operation		60 N	60 N	60 N	
Parking brake effectiveness	10.2.2.2	6°	9°	15°	
Maximum speed	8.1.8	15 km/h	20 km/h	20 km/h	
- forwards horizontal		70% V _{max}	70% V _{max}	70% V _{max}	
- reverse horizontal		or 5 km/h	or 5 km/h	or 5 km/h	
Obstacle climbing and descending ability	8.1.6.2	15 mm	50 mm	100 mm	
Continuous driving distance range	8.1.9.2	15 km	25 km	35 km	
Ground unevenness	8.1.3.3	10 mm	30 mm	50 mm	

PN-EN 12184:2023-02 Tab. 4 (cl. 10.2.2.2) Requirements and tests for driving characteristics on the horizontal for all type classes

Driving characteristics and requirements		Test									
The maximum value of the delay lasting longer than a		0,03s = 4m/s ² ; 2,07m/s ² (Pos.)									
Maximum stopping distance (ot V _{max} =15,0km/h)		4,2m (Pos.)									
Speed (km/h):		PN-ISO 7176-6									
Speed (km/h):	4,0	5,0	6,0	7,0	8,0	9,0	10,0	11,0	12,0	13,0	14,0
Requiredbraking distance max.(m)	0,6	0,8	1,0	1,2	1,5	1,8	2,1	2,5	2,9	3,4	3,9
The actual value of the braking distance (m)	0,50	0,70	0,90	1,10	1,40	1,60	2,00	2,30	2,70	3,20	3,60
Speed (km/h):	16,0	17,0	18,0	19,0	20,0						
Requiredbraking distance max.(m)	5,2	5,9	6,6	7,3	8,0						
The actual value of the braking distance (m)	5,2	5,9	6,6	7,3	8,0						

NOTE:

After the measurements of braking the wheelchair "Tourer HD 20" found that it meets the requirements of PN-EN 12184: 2023-02

MARKING VERIFICATION

Name of product: *Electric drive for a wheelchair
Tourer HD 20"*

Manufacturer: *REHASENSE Sp. z o.o.,
ul. Sulejowska 45 G
97-300 Piotrków Trybunalski*

Requirement according to PN-ISO 7176-15:2002		Durable marking on wheelchair
8.1.a	Name and address of manufacturer	N/T
8.1.b	Identification of model and serial number	N/T
8.1.c	Year of production	N/T
8.1.d	Information on likely driver constraints	N/T
8.1.e	Maximum mass of user	N/T
8.2	Marking of dimension on tyres	N/T
Requirement according to PN-EN 12184:2023-02		Durable marking on wheelchair
13.5	- 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 - 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 - 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 - for wheelchairs not intended to be used as a seat in a motor vehicle, a warning to that effect - for Class A wheelchairs not intended for use outdoors, a warning to that effect	N/T
CE marking		N/T

N/A – not applicable

- END -

ANNEX 1 TO TEST REPORT No. CBC-027/2024

Identification of wheelchair elements



ANNEX 2 TO TEST REPORT No. CBC-027/2024

Identification of wheelchair elements

