



Date 3.06.2024

TEST REPORT NO. CBC-042/2024

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Subject of testing: *Manual lightweight wheelchair***Classification according to**
PN-EN ISO 9999:2017-02: 12 21 03**Type / Model:** *Turtle Transport wheelchair
22" Wheels*

SN.: 0001

REF: 271145

Manufacturer: *Mobilex A/S
Grønlandsvej 5
DK-8660 Skanderborg*

Number of specimens: 1

Applicant: *A-Net s.c.
ul. Łaskowice 174
93-469 Łódź***Kind of testing** *Testing scope according to application of Client
Mechanical testing for conformity with PN-EN 12183 : 2023-02;
ISO 7176-part 3, 8***Test started:** 20.05.2024**Test finished:** 3.06.2024**Approved by:**

DYREKTOR

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 MANUALLY PROPELLED WHEELCHAIR

Maximum load capacity: 150 kg

Overall mass of wheelchair: 16,0 kg

Description

		Description	
Dimensions:	Length:		1024 mm
	Height (max.):		942 mm
	Width:		663 mm
Construction of frame:	Material:		Aluminium
	Method of fastening frame elements:		Welding/rivets/bolts
	Folding/unfolding:		Folding
Drive wheels	Ø external:		482,5 mm
	Ø pipe:		19 mm
	Material:		aluminum
	Way of fastening to driven wheel:		śruby
	Number of fastening points to driven wheel:		6
Driving wheels	Material of ring of a wheel:		Plastic
	Dimension of tyre:		ø546 mm, width 29 mm
	Pressure:		--
	Way of fastening wheel to construction:		Quick connector
	Vertical adjustment (number of fixing positions)		YES 2
	Horizontal adjustment (number of fixing positions):		NO
	Inclination angle adjustment:		NO
	Inclination angle:		1,1°
Castor wheels	Ø of wheel:		147 mm
	Width:		27 mm
	Material of ring of a wheel:		Plastic
	Material of fork:		Plastic
	Vertical adjustment (number of fixing positions)		YES 2
	Horizontal adjustment (number of fixing positions):		NO
	Adjustment of axis inclination angle:		NO
Backrest	Folding/unfolding:		Unfolding
	Backrest inclination adjustment	stepless:	NO
		number of fixing positions	NO
Tilt levers	Two singular:		NO
	One lateral:		YES
Push handles	Kind:		Two separate
Parking brake	Left:		YES
	Right:		YES
	Kind:		with bicycle type lever / lever
	Material of lever:		Plastic / steel
	Fastening to frame:		Using the clamp
	Way of adjustment:		
Upholstery	Material:		Nylon
	Colour:		Black/gray
Wheel space in forward direction position:			400 mm
Wheel space in backward direction position:			505 mm

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

Legrests	Common for both legs:	NO
	Separate for each leg:	YES
	Stationary:	NO
	Folding:	YES
	Vertical adjustment (number of fixing positions)	YES 5
	Horizontal adjustment (number of fixing positions):	NO
	Angle adjustment (number of fixing positions):	NO
	Material of legrest:	Aluminum / plastic
Accessories	Seat belt	NO
	Anti-overturn device:	NO
	Anterior pelvic support:	YES
	Service :	NO

PHOTO OF WHEELCHAIR



TESTING

NORMATIVE REFERENCES

	Applied
PN-EN ISO 21856:2023-01 Assistive products – General requirements and test methods	NO
PN-EN 12183:2023-02 Manually propelled wheelchairs – Requirements and test methods	YES
PN-EN 12184:2023-02 Electrically powered wheelchairs, scooters and their chargers – Requirements and test method	NO
ISO 7176-1:2014 Wheelchairs – Determination of static stability	NO
ISO 7176-2:2001 Wheelchairs – Determination of dynamic stability of electric wheelchairs	NO
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	NO
ISO 7176-5:2008 Wheelchairs – Determination of overall dimensions, mass and turning space	NO
ISO 7176-6:2001 Wheelchairs – Determination of maximum speed, acceleration and retardation of electric wheelchairs	NO
PN-ISO 7176-7:2001 Wheelchairs – Measurement of seating and wheel dimensions	NO
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	NO
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 the ignitability of upholstered furniture. Ignition source: smouldering cigarette.	NO
PN-EN 1021-2:2014-12 Furniture. Assessment of the ignitability of upholstered furniture. Ignition source: math 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 7176-19:2008 Wheelchairs. Wheeled mobility devices for use in motor vehicles	NO

TEST RESULTS ACCORDING TO PN-EN 12183:2023-02

Require ments accordin g to clause	Test method according to clause	Checked characteristics/assemblies/parameters	Test result	Opinio n	Comments	
7 WHEELCHAIR PERFORMANCE						
7.2.1	ISO 7176-8	Static, impact and fatigue strength	Conf.	Pos.		
7.3.1	7.3.3	Tilting fatigue strength	Conf.	Pos.	20 000 of cycles with full loading of wheelchair	
9.2		Braking functions				
9.2.1	9.2.2 ISO7176-3	a. Engaging and disengaging force	60/60N	Conf	Pos.	requirements on force – see table 1
		b. Possibility of adjustment and/or replacement of brake		Conf.	Pos.	
		c. No components that protrude above the level of the unoccupied seat when brake is engaged in the wheelchair fitted with movable or removable arm supports		--	N/A	
		d. No deformation, free play or loss of adjustment that adversely affects the function of the wheelchair		Conf.	Pos.	60 000 cycles
		e. Fatigue strength of parking brake		Conf.	Pos.	60 000 cycles $f \leq 0,5$ Hz

TEST RESULTS according to PN-ISO 7176-3

Requirements according to clause	Test method according to clause	Checked characteristics/assemblies/parameters	Test result	Opinion	Comments	
PN-EN 12183 9.2 Tab. 1	7.2 V/I Measur.	Parking brake	Effectiveness of parking brake of wheelchair positioned forwards down the slope	Conf. 10,0° wheel rotate	Pos.	No rotation or wheel spin when wheelchair is on inclined plane of 7° slope (requirements of PN-EN 12183 cl. 14 Tab. 1)
PN-EN 12183 9.2 Tab. 1	7.2 V/I Measur.		Effectiveness of parking brake of wheelchair positioned backwards down the slope	Conf. 14,0° wheel rotate	Pos.	
PN-EN 12183 9.2 Tab. 1	PN-EN 12183 cl.14 fig5 Measur.		Measurement of force acting on brake lever	60/60N Conf.	Pos.	Below 60 N force engaging hand-brake is required (requirements of PN-EN 12183 cl. 14, Tab. 1)

NOTE1: Measurements were made in the wheelchair with factory regulations (photo)

TEST RESULTS according to ISO 7176-8

Requirements 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	Conf.	Pos.	loading 952 N
4.	8.5.	Footrests - resistance to forces acting upwards	Conf.	Pos.	loading 1226 N
4.	8.6.	Anti-tip levers	Conf.	Pos.	loading 1000 N
4.	8.7.	Grips	Conf.	Pos.	loading 750 N
4.	8.8.	Armrest – forces acting upwards	Conf.	Pos.	loading 1000 N
4.	8.9.	Footrest – forces acting upwards	Conf.	Pos.	loading 506 N
4.	8.10.	Handle grips for pushing – load acting upwards	Conf.	Pos.	loading 880 N
4.	8.11.	Scooter steering handles: Resistance to forward forces	--	N/A	
4.	8.12.	Scooter steering handles: Resistance to rearward forces	--	N/A	
4.	8.13.	Scooter steering handles: Resistance to downward forces	--	N/A	
4.	8.14.	Scooter steering handles: Resistance to upward forces	--	N/A	
4.	9.3.	Backrest – impact strength	Conf.	Pos.	25kg pendulum impact
4.	9.4.	Driving wheel – impact strength	Conf.	Pos.	10kg pendulum impact
4.	9.5.	Castor/front wheel – impact strength	Conf.	Pos.	10kg pendulum impact
4.	9.6.3.	Footrest – side impact	Conf.	Pos.	10kg pendulum impact
4.	9.6.4.	Footrest – in-line impact	Conf.	Pos.	10kg pendulum impact
4.	9.7.1.	Upward impacts on anti-tip devices $h_1=36\text{mm}, h=51\text{mm}$	Conf.	Pos.	10kg pendulum impact
4.	9.7.2.	Forward or rearward impacts on anti-tip devices	Conf.	Pos.	10kg pendulum impact
4.	9.7.3.	Lateral impacts on anti-tip devices	Conf.	Pos.	10kg pendulum impact
4.	10.3.2.	Testing of manually propelled wheelchair on two-drum machine	Conf.	Pos.	200 000 of cycles with full loading of wheelchair (150kg)
4.	10.3.3.	Measurement of initial current for electrically powered wheelchair	-	N/A	
4.	10.3.4.	Testing of electrically powered wheelchair on two-drum machine	-	N/A	
4.	10.4.	Drop testing	Conf.	Pos.	6666 drops of wheelchair with full loading (150kg) from height of 50mm
4.	10.5.	Fatigue test of manually operated parking brakes	Conf.	Pos.	60 000 cycles

NOTE: For cl. 9.3 – angle $\Theta = 30^\circ$, for cl. 9.4 – angle $\Theta = 45^\circ$, for cl. 9.5, 9.6.3, 9.6.4 – angle $\Theta = 60^\circ$, for cl. 9.7.2 – angle $\Theta = 38^\circ$ hit from behind, angle $\Theta = 60^\circ$ – hit from the front, for cl. 9.7.3 – angle $\Theta = 45^\circ$

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 150 kg and person of required mass were used for testing.

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

Final assessment			
PN-EN ISO 21856:2023-01	<i>N/T</i>	PN-ISO 7176-7:2001	<i>N/T</i>
PN-EN 12183:2023-02	<i>Pos.</i>	ISO 7176-8:2014	<i>Pos.</i>
PN-EN 12184:2023-02	<i>N/A</i>	ISO 7176-9:2009	<i>N/A</i>
ISO 7176-1:2014	<i>N/T</i>	ISO 7176-10:2008	<i>N/A</i>
ISO 7176-2:2001	<i>N/A</i>	PN-ISO 7176-14:2001	<i>N/A</i>
ISO 7176-3:2012	<i>Pos.</i>	PN-ISO 7176-15: 2002	<i>N/T</i>
ISO 7176-4:2008	<i>N/A</i>	ISO 7176-16: 2012	<i>N/T</i>
ISO 7176-5:2008	<i>N/T</i>	PN-EN 1021-1:2014-12	<i>N/T</i>
ISO 7176-6:2001	<i>N/A</i>	PN-ISO 7176-19:2008	<i>N/T</i>

*) 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

- END -

ANNEX 1 TO TEST REPORT No. CBC-042/2024

Identification of wheelchair elements



ANNEX 2 TO TEST REPORT No. CBC-042/2024

Identification of wheelchair elements

