CENTRE FOR TESTING AND CERTIFICATION - MECH-TEST
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Date 19.04.2024

TEST REPORT NO. *CBC-038/2024*

Subject of testing:	*COMMODE CHAIR WITH BACKREST AND ARMRESTS*	**Classification according to PN-EN ISO 9999:2017-02 :** *09 33 03*
Type / Model:	*COMMODE CHAIR WITH BACKREST AND ARMRESTS*	**REF:** *KING-CMDBA-00 KING-BCMDBA-00*
		LOT: --
Manufacturer:	*LM GLOBAL DESIGN LTD Suite 123, The Capel Building, Mary`s Abbey, Dublin, D07 VY 68 Ireland*	**Number of specimens:** *1 1*
Applicant:	*A-Net s.c. ul. Łaskowice174 93-469 Łódź*	
Kind of testing	*Testing scope according to application of Client Mechanical testing according to ISO 17966:2016,*	

Date recived: *8.04.2024*

Test started: *8.04.2024*

Test finished: *19.04.2024*

Approved by:

DYREKTOR

mgr inż. Andrzej Tkaczyk

Special comments / enclosures:

PHOTO OF PRODUCT

KING- CMDBA-00
Mass of product: *4,0 kg*
Maximum permissible user mass: *160 kg*
Width of product: *605 mm*
Length of product: *528 mm – 540 mm*
Turning width: *668mm – 697mm*
Height of product: *750 mm - 898 mm*
Seat: *398 mm x 495 mm*

TESTING

NORMATIVE REFERENCES	Applied
ISO 17966:2016 Assistive products for personal hygiene that support users – Requirements and test methods	*YES*
PN-EN ISO 21856:2023-01 Assistive products – General requirements and test methods	*NO*
PN-EN 581-2:2016-02 Outdoor furniture. Seating and tables for camping, domestic and contract use. Part 2: Mechanical safety requirements and test methods for seating.	*NO*
PN-EN 1022:2019-03 Domestic furniture. Seating. Determination of stability.	*NO*
EN 1728:2012 Domestic furniture. Seating. Test methods for the determination of strength and durability.	*NO*
NOTE: During the visual inspection performed before testing, no manifest defects which may affect test results were detected	

RESULT OF MECHANICAL TESTS ACCORDING TO ISO 17966:2016

Requirements according to clause	Test method according to clause	Checked characteristics/assemblies/parameters	Real value	Test result	Comments
4.1	ISO 14971 ISO 12100	Risk analysis	--	*N/T*	
4.2	V/I	Intended performance	*Conf.*	*Pos.*	
4.3	ISO 14155	Clinical evaluation and investigation	--	*N/T*	
4.4	V/I	Assistive products for presonal hygiene that can be dismantled	*Conf.*	*Pos.*	
4.5	V/I	Fasteners	*Conf.*	*Pos.*	
4.6	V/I	Means to prevent falling out	--	*N/A*	
4.7	V/I	User mass / load limits	*Conf.*	*Pos.*	
5	V/I	Materials	--	*N/T*	*the possibility of recycling*
5.2	V/I, B.5.2	Flammability			
5.2.2	IEC 60695-11-10	Moulded parts used as enclosures for electrical equipment	--	*N/A*	
5.2.3	ISO 8191-1 ISO 8191-2 IEC 60695-11-10	Upholstered parts and moulded parts	--	*N/A*	
5.3	ISO 10993-1	Biocompatibility and toxicity	--	*N/T*	
5.4		Infection and microbiological contamination			
5.4.1	B.5.4.1	Cleaning and disinfection	*Conf.*	*Pos.*	
5.4.2	5.4.2, V/I	Resistance against temperature alternations	--	*N/A*	*does not apply to washing or disinfection*
5.4.3	ISO 22442-1 B.5.4.3	Animal tissue	--	*N/A*	
5.5	ISO 9227	Resistance to corrosion	--	*N/A*	
6		Emitted sound and vibration			
6.1	ISO 3746 B.6.1	Noise and vibration	--	*N/A*	
6.2	Measur.	Soudpressure levels and frequencies of audible warning devices	--	*N/A*	*$f \geq 500Hz$ $f \leq 3000Hz$ $L_{pA} \geq 65dB$*
7	IEC 60601-1-2 7.2,7.3,7.4	Electromagnetic compatibility	--	*N/A*	
8		Electrical safety	--	*N/A*	
9		Overflow, leakage, and ingress of liquids	--	*N/A*	
10		Surface temperature	--	*N/A*	*$t^0 \leq 41^0C$* ■ *requirement does not concern heat of direct solar radiation - PN-EN 12182,clause 10a* ■ *requirement concerns only persons with insensitiveness of skin (who do not feel heat) - PN-EN 12182,clause 10d*

Requirements according to clause	Test method according to clause	Checked characteristics/assemblies/parameters	Real value	Test result	Comments
11		Safety of moving and folding parts			
11.1	V/I, Measur	Squeezing (**moving parts**)			
		a - any moving parts that constitute a safety hazard shall be provided with guards that can only be removed by the use of a tool; **or**	--	*N/A*	
		b - the gap between exposed parts of an assistive product that move relative to each other shall be maintained throughout the range of movement at less than the minimum value or more than the maximum value set out in Table 3	--	*N/A*	*Tab.3*
		c - If cords (ropes), chains and drive belts are used, they shall either be confined so that they cannot run off or jump out of their guiding devices, or a safety hazard shall be prevented by other means (mechanical means applied for this purpose shall be removable only by the use of a tool); **or**	--	*N/A*	
		d - the APPH shall incorporate a control device which initiates the movement when it is operated and stops the movement when it is released (e.g. a spring loaded control device that returns to the stop position when released); **or**	--	*N/A*	
		e - the APPH shall incorporate a means for detecting that a person is in danger of being trapped and automatically activate a means of preventing injury (e.g. by stopping the movement).	--	*N/A*	
11.2	11.2.2	Velocity of powered lifting and lowering movements	--	*N/A*	$V_1 \leq 0,15 m/s$ $V_2 \leq 0,25 m/s$
11.3	V/I	Mechanical wear	--	*N/A*	
11.4	V/I, Measur.	Trapping zones for feet in relation to moving parts	--	*N/A*	*fig. 11 i 12*
12		Prevention of traps for parts of the human body			
12.1	V/I. Measur.	Holes and clearances between stationary parts	*Conf.*	*Pos.*	*Tab.4*
12.2	V/I. Measur.	V-shaped openings	--	*N/A*	$\geq 75^0$
13	V/I. Measur.	Folding and adjusting mechanisms	*Conf.*	*Pos.*	*adjustable in increments ≤25mm*
13.2	V/I.	Locking mechanisms	--	*N/A*	
14	14.3 Measur. V/I.	Lifting and carrying means	--	*N/A*	
	V/I.	Presence of the handling devices (e.g. handles) in components of mass greater than 10 kg, **or**	--	*N/A*	
	V/I.	Information indicating the points where components can be lifted and describing how they shall be handled during disassembly, lifting, carrying and assembly available	--	*N/A*	
15	V/I. Measur.	Portable and hand-held products for personal hygiene or hand-held parts	--	*N/A*	*Tab.5 Drop height*
16		Static strength, impact and durability			*Tab. 6,7,8*
16.4.2.1	16.4.2.1	Static strength of a lying support surface	--	*N/A*	*Fig. 14, 15*
16.4.2.2	16.4.2.2	Static strength of an arm support downwards ****)	*Conf.*	*Pos.*	*Fig. 18, 19*
16.4.2.3	16.4.2.3	Static strength of seat and back support *)	*Conf.*	*Pos.*	*Tab.6; Fig. 16*
16.4.2.4	16.4.2.4	Static strength of foot supports	--	*N/A*	*Tab.6, Fig. 17,*
16.5.1	16.5.2	Durability			
16.5.2.1	16.5.2.1	Durability of the arm support *****)	*Conf.*	*Pos.*	*Tab.6, Fig.18*
16.5.2.2	16.5.2.2	Durabilityof seat surface **)	*Conf.*	*Pos.*	*Tab.6,7,8, Fig.16*
16.5.2.3	16.5.2.3	Durability of a power operated height adjustment mechanism	--	*N/A*	*Tab.6,7,8, Fig.14,16*
16.5.2.4	16.5.2.4	Durability of power operated movable sections	--	*N/A*	*Tab.6,7,8, Fig.14,16*
16.5.2.5	16.5.2.5	Durability of the frame of an APPH with a sitting surface equipped with legs/wheels ***)	*Conf.*	*Pos.*	*Tab.6,7,8, Fig.20 NOTE 4*
16.6		Impact			
16.6.1	16.6.2.1	Back support ******)	*Conf.*	*Pos.*	*for h≥320mm*

*) F_1= mxgxS= 2355N, F_2 = mxgx0,5= 785N, 20 min. **) F = mxg xS= 2355N, $n_{TC}=u_{UC}\,xu_{TD}\,x365xt_{DL}$= 1x1x365x4 = 1460 cycle
) F_1=1280N (forward/backwards), F_1=640N (left/right), n_{TC}=1460 cycle, *) F = 1280N, *****) F = 635N, n_{TC}=1460 cycle,
******) F = 250N , $\beta=30^0$

Requirements according to clause	Test method according to clause	Checked characteristics/assemblies/parameters	Real value	Test result	Comments
16.6.1	16.6.2.2	Lying support surface ****)	*Conf.*	*Pos.*	*Fig.23*
17	17.2	Stability *)	*Conf.*	*Pos.*	*front,rear≥10⁰ side≥5⁰*
18	V/I. B18	Surfaces, corners, edges and protruding parts	*Conf.*	*Pos.*	
19	V/I.	Small parts	*Conf.*	*Pos.*	
20	B.20	Forces in soft tissues of the human body	*Conf.*	*Pos.*	
21	V/I. Measur.	Ergonomic principles			
	V/I. Measur.	a - the surface of buttons shall at least cover a circle of 15 mm in diameter; any distance between buttons shall be more than 10 mm	--	*N/A*	
	V/I. Measur.	b - the distance between any handle (part intended to be grabbed) requiring an operating force of more than 10 N and any construction part of the APPH shall not be less than 35 mm	--	*N/A*	
	V/I. Measur.	c - the distance between any upper surface of a pedal (in any operating position) and any other part of the APPH shall have a vertical toe clearance of not less than 75 mm	--	*N/A*	
	V/I. Measur.	d - the diameter of any operating handles and/or knobs requiring an operating force of more than 10 N shall be between 19 mm and 43 mm	--	*N/A*	
	V/I. Measur.	e - for an APPH operated from a standing position, pedals shall be placed not more than 300 mm above the surface of the floor	--	*N/A*	
	V/I. Measur.	f - for an APPH operated from a standing position, hand operated controls shall be placed at a height of 800 mm to 1 200 mm above the surface of the floor	--	*N/A*	
	V/I. Measur.	g - for an APPH operated from a sitting position, controls intended to be operated by the occupant while seated shall be within the occupant's reach space	--	*N/A*	
	V/I. Measur.	h - the operating forces or torques required for those parts of the device that are designed to be operated by fingers, hands/arms or feet shall not exceed the values in Table 9	--	*N/A*	
22		Mobile APPH **(09 12 03, 09 33 03, 09 33 12)**			
22.2	V/I.	Immobilizing means	--	*N/A*	
22.2.2	22.2.3	Locking devices	--	*N/A*	*l≤50mm – 1 min. on ramp 6⁰*
	22.2.4	Brakes	--	*N/A*	*Tab.7,8*
22.2.5	V/I.	If a mobile APPH is intended to allow sideways transfer then any brake lever in the engaged position shall not protrude above the unoccupied seat	--	*N/A*	
22.3	V/I.	Electrical safety for mobile APPHs	--	*N/A*	
22.4 22.4.2	V/I.	Rough handling and movement	--	*N/A*	
	22.4.3	Movement over a threshold	--	*N/A*	
	22.4.4	door frame shock	--	*N/A*	
22.5		Functional requirements for mobile APPHs	--	*N/A*	
22.5.1	V/I.	Foot supports	--	*N/A*	
22.5.2	V/I. Measur.	Position of push handles/points	--	*N/A*	
22.5.3	V/I. Measur.	Turning diameter of mobile APPHs	--	*N/A*	
22.6	Measur.	Moving forces	--	*N/A*	*F_1≤160N F_2≤85N*
23	23.2	Fixed ARRHs	*Applies: **(09 33 03, 09 33 12, 09 12 12, 09 12 18, 18 18 03, 18 18 10, 18 18 11, 18 15 06)***		
23.3	23.3.2	Shower seats **(09 33 03)**	*Conf.*	*Pos.*	
	23.3.2.1	Static strength **)	*Conf.*	*Pos.*	*Tab.6, Fig.24*
	23.3.2.2	Durability ***)	*Conf.*	*Pos.*	*Tab. 7,8, Fig.16*

*) Rear stab=14⁰, front stab.=15⁰, side stab.= 15⁰, **) F = m x g x S= 2355N, 60 sek.,***) F = m x g x S= 2355N, $n_{TC}=u_{UC} \times u_{TD} \times 365 \times t_{DL}$ = 1 x 1 x 365 x 4 = 1460 cycle, ****) F=250N, h=180mm, x 20

Requirements according to clause	Test method according to clause	Checked characteristics/assemblies/parameters	Real value	Test result	Comments
	23.3.2.3	Impact	*Conf.*	*Pos.*	*F=25kg, β=30°, Fig. 25*
23.4	23.4.2	Bathing stretchers, shower tables and diaper changing tables (09 33 12)	--	*N/A*	
	23.4.2.1	Static strength	--	*N/A*	*Tab.6, Fig. 14,16,26*
	23.4.2.2	Durability	--	*N/A*	*Tab.7,8, Fig.14*
23.5		Bath/shower chairs (without wheels), bath boards, stools, back supporrts and seats (09 33 03) (propped on the edge of the tub)	--	*N/A*	
	23.5.2	Durability	--	*N/A*	*Tab.6,9, Fig. 27*
23.6		Raised toilet seats (09 12 18)	--	*N/A*	
	23.6.3.1	Static strength	--	*N/A*	
	23.6.3.2	Durability	--	*N/A*	
23.7		Handrails, grab bars and handgrips (18 18 03, 18 18 06)	--	*N/A*	
23.7.2		Ergonomic principles	--	*N/A*	
	23.7.3.1	Static strength	--	*N/A*	
	23.7.3.2	Durability	--	*N/A*	
23.8		Removable grab rails and handgrips (18 18 10)	--	*N/A*	
23.8.2		Ergonomic principles	--	*N/A*	
	23.8.3.1	Static strength	--	*N/A*	
	23.8.3.2	Durability	--	*N/A*	
23.9		Hinged rails and arm supports (18 18 11)	--	*N/A*	
	23.9.3	Static strength	--	*N/A*	
	23.9.3.1	Durability	--	*N/A*	
23.10		Height-adjustable plinths and brackets (18 15 06)	--	*N/A*	
	23.10.2.1	Static strength	--	*N/A*	
	23.10.2.2	Durability	--	*N/A*	
24		Static APPHs (09 12 12, 09 12 15, 09 12 21, 09 33 03)			
24.3 24.3.2.1	24.3.2.2	Toilet seats inserts (non fixed) (09 12 15)	--	*N/A*	
24.4	V/I, Measur	Toilet seats with built-in raising mechanism to help standing up and sitting down (non-fixed) (09 12 21)	--	*N/A*	
24.5	V/I, Measur	Bath/shower chairs (without wheels), bath boards, stools, back supports and seats (09 33 03)	--	*N/A*	
24.5.3	V/I, Measur	Stability	*Conf.*	*Pos.*	
24.5.4		Stability tests for APPHs designed to be supported by the sides of a bathtub	--	*N/A*	
	24.5.4.2	Forward stability	--	*N/A*	
	24.5.4.3	Sideward stability for transfer bench without a handle	--	*N/A*	
	24.5.4.4	Sideward stability for transfer bench with a handle	--	*N/A*	
	24.5.4.5	Backward stability (when back support is provided)	--	*N/A*	
24.5.5	24.5.5.2	Strength of brackets	--	*N/A*	
24.5.6	24.5.6.2	Friction test of bath board/seat	--	*N/A*	
24.5.7	24.5.7.2	Static horizontal force test on handle	--	*N/A*	
24.5.8	24.5.8.2	Static vertical force test of handle of bath and transfer boards	--	*N/A*	
25		**Information supplied by the manufacturer**			
25.1	V/I	General	--	*N/T*	
25.2	V/I	Instructions for use	--	*N/T*	
25.2.1		**Pre-sale information**			
	V/I	In addition to the rwquirements of 25.1 pre-sale information shall include the following:	--	*N/T*	
	V/I	a - information on the intended user	--	*N/T*	

Requirements according to clause	Test method according to clause	Checked characteristics/assemblies/parameters	Real value	Test result	Comments
25.2.1	V/I	b - information on how to obtain the user information in a format appropriate for use by people with visual, reading or cognitive disabilities	--	*N/T*	
	V/I	c - all information available in pictogram(s) as far as possible	--	*N/T*	
	V/I	d - a description of the intended use and the intended environment	--	*N/T*	
	V/I	e - maintenance instructions, if applicable	--	*N/T*	
	V/I	f - if an APPH 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	g - if an APPH 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	h- the overall dimensions (width, length and height) of the APPH, expressed in millimetres, and its mass, expressed in kilograms, when it is ready for use and, if applicable, when it is folded or dismantled	--	*N/T*	
	V/I	i - the turning diameter and minimum distance that the APPH can be turned 180 ° for a mobile product	--	*N/T*	
	V/I	j - the mass of the APPH expressed in kilograms (if the APPH can be dismantled or has any removable parts that have a mass heavier than 10 kg, the mass of those parts shall be included)	--	*N/T*	
	V/I	k - if the APPH 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	l - instructions on forces caused on the wall for products fixed to the wall in normal use	--	*N/T*	
	V/I	m - if applicable, a warning about dangerous combinations of devices (e.g. cushions for the prevention of pressure injury often only work on correct seat surface) and combinations of flame-resistant and non-flame-resistant material	--	*N/T*	
	V/I	n - a list of accessories, detachable parts and materials that the manufacturer has determined as being intended for use with the APPH	--	*N/T*	
	V/I	o - 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 (if it is only programmable by the manufacturer this shall be stated)	--	*N/T*	
	V/I	p - a warning if the APPH might disturb the operation of devices in its environment that emit electromagnetic fields	--	*N/T*	
	V/I	q - a warning if the performance of the APPH can be influenced by electromagnetic fields (e.g. those emitted by portable telephones, electricity generators or high power sources);	--	*N/T*	
	V/I	r - operator control adjustments	--	*N/T*	
	V/I	s - whether and how the APPH can be folded or dismantled to assist in storage or transport	--	*N/T*	
	V/I	t - instructions regarding transport of the APPH (e.g. in a car or aeroplane)	--	*N/T*	
	V/I	u - measured sound pressure level	--	*N/T*	
	V/I	v - expected lifetime of the APPH	--	*N/T*	

Requirements according to clause	Test method according to clause	Checked characteristics/assemblies/parameters	Real value	Test result	Comments
	V/I	w - maximum user mass and maximum load	--	*N/T*	
25.2.2		**User information**			
	V/I	User information shall be provided by the manufacturer with each APPH. Information shall contain all pre-sale warnings and information and the following as applicable for each APPH:	--	*N/T*	
	V/I	a - the location and the type of identification number/word on the APPH shall be given for the unique identification number of the APPH	--	*N/T*	
	V/I	b - any adjustment or settings required before the APPH can be used and information on how adjustments or settings affect the APPH	--	*N/T*	
	V/I	c - information on adjustment possibilities and the competence required to carry out these adjustments	--	*N/T*	
	V/I	d - instructions on operation of all controls	--	*N/T*	
	V/I	e - the battery type and nominal voltage	--	*N/T*	
	V/I	f - instructions for battery maintenance	--	*N/T*	
	V/I	g - 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*	
	V/I	h - instructions on dismantling and re-assembly of the APPH or any removable parts	--	*N/T*	
	V/I	i - 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	j - a warning if surface temperatures can increase/decrease when exposed to external sources of heat or cold (e.g. sunlight, outdoor environment)	--	*N/T*	
	V/I	k - if the intended purpose of an APPH cannot be met without a hazard (e.g. holes, V-shaped openings), a warning and instructions on how to operate the APPH safely	--	*N/T*	
	V/I	l - if the intended purpose of an APPH cannot be met without a hazard due to moving parts such as squeezing, a warning and instructions on how to operate the APPH safely	--	*N/T*	
	V/I	m - the level of resistance to ignition of materials and assemblies	--	*N/T*	
	V/I	n - information on the recycling of used batteries and other parts of the APPH	--	*N/T*	
	V/I	- It is recommended to include instructions on how to solve simple problems for the ease of use	--	*N/T*	
25.2.3		**Service information**			
	V/I	The service information shall contain all the pre-sale information, user information and instructions necessary for the maintenance, adjustment and repair of the assistive product and for the replacement of parts.	--	*N/T*	
	V/I	The service information shall contain all the pre-sale information and the user information.	--	*N/T*	
	V/I	The service information shall be sufficiently detailed concerning preventive inspection, maintenance and calibration, including the frequency of such maintenance.	--	*N/T*	
	V/I	The service information shall provide information for the safe performance of such routine maintenance necessary to ensure the continued safe use of the assistive product.	--	*N/T*	
	V/I	Additionalty, the service information shall identify the parts on which preventive inspection and maintenance shall be performed by service personnel, including the periods to be applied and details about the actual performance of such maintenance.	--	*N/T*	

Requirements according to clause	Test method according to clause	Checked characteristics/assemblies/parameters	Real value	Test result	Comments
25.3		**Labeling**	--	*N/T*	
	V/I	- year of production for the product	--	*N/T*	
	V/I	- Detachabfe parts of an assistive product with a mass of more than 10 kilograms shall be marked with the actual mass on the part.	--	*N/T*	
	V/I	- Symbole for use in the labelling of medical devices shall be in accordance with ISO 15223-1	--	*N/T*	
	V/I	- The labels shall only be removable with a tool or by appreciable force and shall be sufficiently durable to remain clearly legible during the expected life time of the APPH. In considering the durability of the markings, the effect of normal use shall be taken into account	--	*N/T*	
	V/I	- Attach a unique serial number on products where possible	--	*N/T*	
26	V/I	**Packaging**	--	*N/T*	

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: Conformity assessment of product according to standard requirements refer to the scope of mechanical tests ordered by client

NOTE 2 : During visual inspection before testing any visible defects that can have an effect on test results were not stated.

NOTE 3: Sample/object for testing was delivered to the Laboratory by the Orderer.

NOTE 4: A vertical test load F=0,8 x 160kg = 128kg was applied to the seat at a height of 150mm above the seat. (fig. 20).
A horizontal force was applied to a point at a height of 300mm above the seat so that the rear legs of the product lifted above the ground to a height of 30mm. (fig. 20)
Then the test consists of cyclically raising and lowering the hind legs (1460 cycles).
Positive test result.

CONCLUSIONS:

Testing object complies with the requirements of the standard :
ISO 17966:2016

- END –