POLISH CENTRE FOR TESTING AND CERTIFICATION

02-699 Warszawa, ul. Kłobucka 23A

Mechanical Laboratory

tel.: (+48 22) 46 45 594; fax: (+48 22) 46 45 563

e-mail: labmech@pcbc.gov.pl

FRL 15 – 03.09

Date 20.07.2011

TEST REPORT NO. *BR –087/L-103/2011*

Subject of testing:	*Manual lightweight wheelchair*	**Classification according to PN-EN ISO 9999:2007:** 12 21 06
Type / Model:	*DOLPHIN – version BARRACUDA*	**Factory ref. no.:** *268944*
Manufacturer:	*MOBILEX A/S, Noerskovvej I DK - 8660 Skanderborg*	**Number of specimens:** *1*
Applicant:	*A-Net s.c. 93-469 Łódź, ul. Łaskowice174*	
Kind of testing	*Testing scope according to application of Client Mechanical testing for conformity with PN-EN 12183 : 2010; PN-EN 12182:2005; PN – ISO 7176 – part 3,5,7,8,15 ISO 7176-part 1, PN-EN 1021-1:2007*	

Test started: *13.05.2011*

Test finished: *20.07.2011*

Performed by:	**Checked by:**	**Approved by:**
Mirosław Szymański	*Ireneusz Czerwiński*	KIEROWNIK LABORATORIUM MECHANICZNEGO *mgr inż. Andrzej Tkaczyk*

Special comments / enclosures:

1) *Annex 1 – Identyfication of wheeichair elements*

CHARACTERISTIC OF MANUALLY PROPELLED WHEELCHAIR

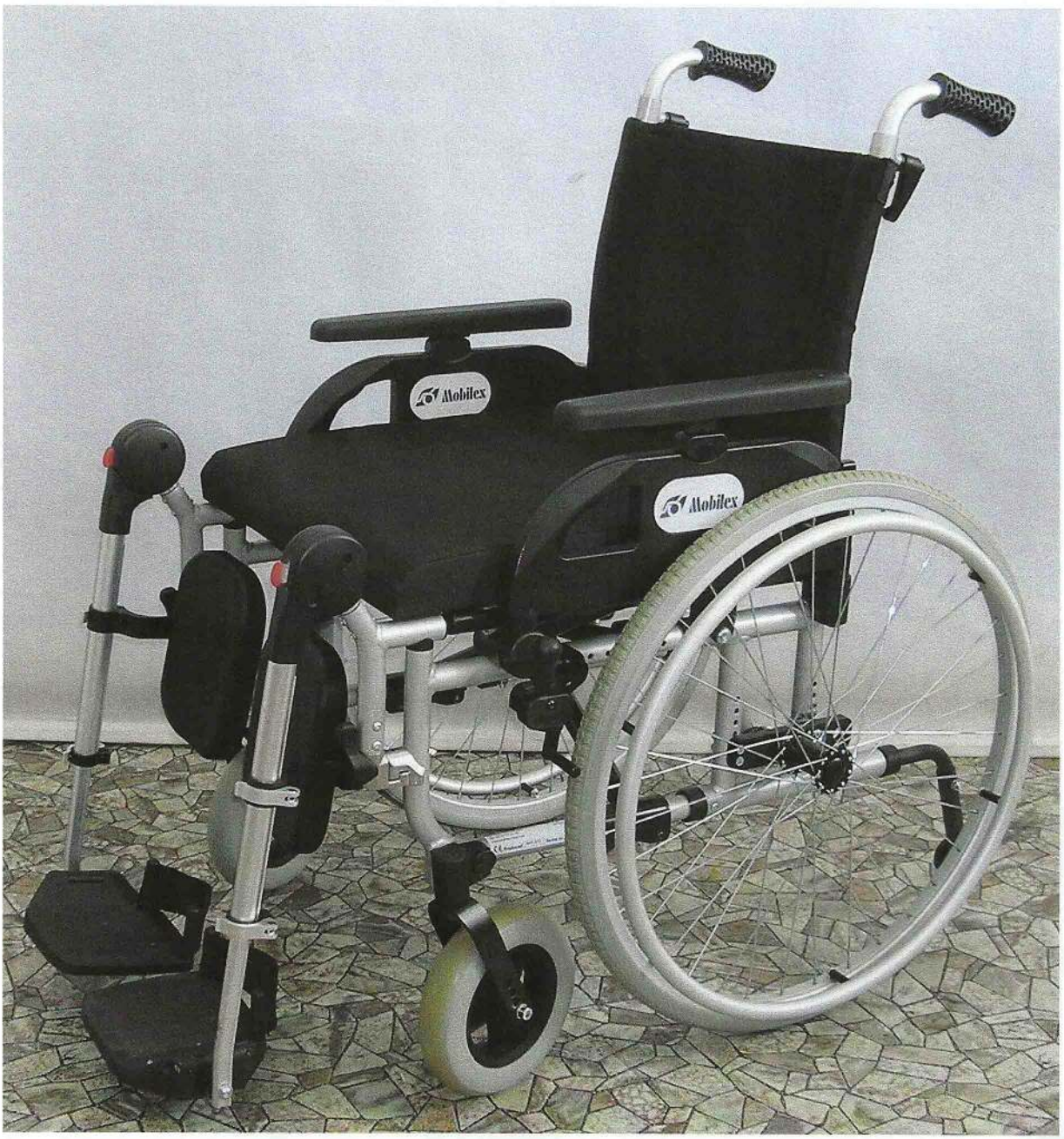
Name of wheelchair: *DOLPHIN version BARRACUDA*	**Factory ref. no.** *268944*
Maximum load capacity: *120kg*	**Overall mass of wheelchair:** *23,10kg*

Description				Comments
Dimensions:	**Length:**		*995-1055 mm*	*4 positions of frame length adjustment*
	Height (max./min.):		*970-1060 mm*	*infinitely adjustable handles*
	Width:		*636 mm*	
Construction of frame:	**Material:**		*Aluminum alloy*	
	Method of fastening frame elements:		*Welding*	
	Folding/unfolding:		*Folding*	
Drive wheels	**Ø external:**		*534mm*	
	Ø pipe:		*19mm*	
	Material:		*Aluminum alloy*	
	Way of fastening to driven wheel:		*Bolts, nuts*	
	Number of fastening points to driven wheel:		*6*	
Driving wheels	**Material of ring of a wheel:**		*Aluminum alloy*	
	Dimension of tyre:		*24"x1⅜"(37x540mm)*	
	Pressure:		*N/A*	*Solid tyre*
	Way of fastening wheel to construction:		*Quick connector*	
	Vertical adjustment (number of fixing positions)		*YES 6*	
	Horizontal adjustment (number of fixing positions):		*YES 3*	
	Inclination angle adjustment:		*NO*	
	Inclination angle:		*0°*	
Castor wheels	**Ø of wheel:**		*198mm*	
	Width:		*44mm*	
	Material of ring of a wheel:		*Plastic*	
	Material of fork:		*Aluminum alloy*	
	Vertical adjustment (number of fixing positions)		*YES 4*	
	Horizontal adjustment (number of fixing positions):		*NO*	
	Adjustment of axis inclination angle:		*YES*	
Backrest	**Folding/unfolding:**		*Unfolding*	
	Backrest inclination adjustment	**stepless:**	*NO*	
		number of fixing positions	*YES 3*	
Tilt levers	**Two singular:**		*YES*	*take the role of anti-overturn device*
	One lateral:		*NO*	
Push handles	**Kind:**		*Two separate*	
Parking brake	**Left:**		*YES*	
	Right:		*YES*	
	Kind:		*Lever*	
	Material of lever:		*Steel, plastic*	
	Fastening to frame:		*With screws*	
	Way of adjustment:		*With screws and clamp stabilizing position of break towards tyre*	*take the role of anti-overturn device*
Upholstery	**Material:**		*Nylon*	
	Colour:		*Black*	
Wheel space in forward direction position:			*360-420 mm*	*4 positions of frame length adjustment*
Wheel space in backward direction position:			*460-520 mm*	

NOTE. Measurements were made in the wheelchair with factory regulations and castor wheel axis tilt – 0°. Legrests 50mm over base, angle of backrest - 12,5°.

Legrests	**Common for both legs:**	*NO*	
	Separate for each leg:	*YES*	
	Stationary:	*NO*	
	Folding:	*YES*	
	Vertical adjustment (number of fixing positions)	*YES*	*stepless*
	Horizontal adjustment (number of fixing positions):	*NO*	
	Angle adjustment (number of fixing positions):	*NO*	
	Material of legrest:	*Aluminum alloy Plastic*	
Accessories	**Seat belt**	*NO*	
	Anti-overturn device:	*YES*	*3 degrees of adjustment*
	Anterior pelvic support:	*YES*	
	Service :	*YES*	

PHOTO OF WHEELCHAIR



TESTING

NORMATIVE REFERENCES	Applied
PN-EN 12182:2005 Technical aids for disabled persons – General requirements and test methods	*YES*
PN-EN 12183:2010 Manually propelled wheelchairs – Requirements and test methods	*YES*
PN-EN 12184:2010 Electrically powered wheelchairs, scooters and their chargers – Requirements and test method	*NO*
ISO 7176-1:1999 Wheelchairs – Determination of static stability	*YES*
PN-ISO 7176-2:1998 Wheelchairs – Determination of dynamic stability of electric wheelchairs	*NO*
PN-ISO 7176-3:1998 Wheelchairs – Determination of efficiency of brakes	*YES*
ISO 7176-4:1997 Wheelchairs – Energy consumption of electric wheelchairs and scooters and determination of theoretical distance	*NO*
PN-ISO 7176-5:2001 Wheelchairs – Determination of overall dimensions, mass and turning space	*YES*
PN-ISO 7176-6:1998 Wheelchairs – Determination of maximum speed, acceleration and retardation of electric wheelchairs	*NO*
PN-ISO 7176-7:2001 Wheelchairs – Measurement of seating and wheel dimensions	*YES*
PN-ISO 7176-8:2002 Wheelchairs – Requirements and test methods for static, impact and fatigue strengths	*YES*
ISO 7176-9:2001 Wheelchairs – Climatic test for electric wheelchairs	*NO*
PN-ISO 7176-10:1998 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 (Electrotechnical Laboratory)*
PN-ISO 7176-15: 2002 Wheelchairs – Requirements for informative disclosure, documentation and labelling	*YES*
PN-EN 1021-1:2007 Furniture. Assessment of ignitability o upholstered furniture. Ignition source: smouldering cigarette.	*YES*
PN-ISO 7176-16:2001 equivalent: **PN-90/P-04823** 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	*NO*

RESULT OF MECHANICAL TESTS ACCORDING TO PN-EN 12182 (unaccredited test method)

Requirements according to clause	Test method according to clause	Checked characteristics/assemblies/parameters		Real value	Test result	Comments
4.1	**5.2, 5.4.2, 5.5, 6, 8.2.1, 9.4,10,21, 22, 24 and EN 1441**	Risk analysis		-	*N/T*	
4.2	**V/I**	Expected characteristics and technical documentation		*Conf.*	*Pos.*	
4.3	**EN-540**	Clinic assessment		-	*N/T*	
4.4	**V/I**	Technical support which can be dismantled		*Conf.*	*Pos.*	
4.5	**V/I**	Single use connections		-	*N/A*	
5.1	**PN-ISO 7176-16**	Flammability		*Conf.*	*Pos.*	
5.2	**PN-EN ISO 10993-1**	Biological conformity and toxicity		-	*N/T*	
5.3	**V/I**	Impurities and residues		-	*N/A*	
5.4	**24, Annex C C.5.4.1**	Microbiological infections and contamination	Cleaning	*Conf.*	*Pos.*	
	24, Annex C C.5.4.1		Disinfection	-	*N/A*	
	EN 12442-1		Animal tissue	-	*N/A*	
7	-	Electromagnetic compatibility		-	*N/A*	

Requirements according to clause	Test method according to clause	Checked characteristics/assemblies/parameters	Real value	Test result	Comments
8	-	Electrical safety	-	*N/A*	
9	**V/I**	Overflowing, pouring out, leakage and pouring in of liquids	-	*N/A*	
11	**EN-550, 552,554, 556, 868-1**	Sterility	-	*N/A*	
12	**V/I Measur.**	Safety of moving elements	*Conf.*	*Pos.*	*Comments in service manual*
13	**V/I Measur.**	Trap prevention for parts of human body	*Conf.*	*Pos.*	*Comments in service manual*
14	**V/I**	Folding and adjusting of mechanisms	*Conf.*	*Pos.*	
15	**V/I Measur.**	Hand grips for transferring	-	*N/A*	*Wheelchair is not provided with hand grips for transferring*
16.1	**16.2**	Aids for support of users	*Conf.*	*Pos.*	
17	**V/I**	Portable and moving technical aids	-	*N/A*	
18	**V/I**	Surfaces, corners and edges	*Conf.*	*Pos.*	
19	**C18**	Hand kept technical aids	-	*N/A*	
20	**V/I Measur.**	Grips and other elements for transferring	-	*N/A*	*Mass of wheelchair below 20 kg*

TEST RESULTS ACCORDING TO PN-EN 12183:2010

DESIGN DATA

Requirements according to clause	Test method according to clause	Checked characteristics/assemblies/parameters		Real value	Test result	Comments
6.1	**V/I**	Foot supports, lower leg supports and arm supports				
		Foot supports	Possibility to position the occupant's feet at the required height	*Conf.*	*Pos.*	
			Presence of the technical means to prevent the occupant's feet from sliding	*Conf.*	*Pos.*	
6.2	**V/I**	Pneumatic tyres				
		Presence of the same type of valve connection on all tyres		--	*N/A*	
		Presence of the marking of the tyres or the rims with the maximum pressure in kPa or bar		--	*N/A*	
6.3	**V/I**	Possibility to mount an anterior pelvic support		*Conf.*	*Pos.*	
6.4 8.2.n,o 8.5.b,d	**PN-ISO 7176-19**	Use of wheelchair as a seat in motor vehicles		--	*N/A*	*Manufacturer did not provide use of the wheelchair as a seat in motor vehicles*
6.5	**V/I**	Presence of the braking systems		*Conf.*	*Pos.*	
	Measur.	Width of brake lever of bicycle type		--	*N/A*	*Required ≤ 75mm within the distance of 15mm*
6.6	**V/I**	Component mass				
	Measur.	Presence of the handling devices (e.g. handles) in components of mass greater than 10 kg		--	*N/A*	*Required for wheelchairs intended to be dismantled for storage or transportation.*
		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.*	*mass of the heaviest parts 9,8 kg*
6.7 7.2.1, 7.4.1, 7.7.1, 7.11.1, 7.14.1	**V/I Measur.**	Operations intended to be carried out by the occupant and/or assistant		*Conf.*	*Pos.*	
6.8.1	**V/I Measur.**	Accessibility of the occupant to controls intended for operation by the occupant		*Conf.*	*Pos.*	*Required access region according to Fig. 2*
6.8.2	**V/I Measur.**	Accessibility of the assisstant to controls intended for operation by an assistant		*Conf.*	*Pos.*	*Required access region according to Fig. 3*
6.9, 7.7	**V/I Measur.**	Push handles and handgrips		*Conf.*	*Pos.*	

Requirements according to clause	Test method according to clause	Checked characteristics/assemblies/parameters	Real value	Test result	Comments
		PERFORMANCE REQUIREMENTS			
7.1	**V/I Measur.**	Preparation of the wheelchair for testing by the laboratory (location, adjustments) according to: 1. manufacturer's instruction 2. requirements of PN-ISO 7176 3. requirements of PN-ISO 7176:22	*Conf.*	*Pos.*	
7.2	**7.2.2.1 V/I Measur.**	Foot supports, lower leg support assemblies and arm supports			
		Possibility to locate securely in intended position	*Conf.*	*Pos.*	
		Increment	*Conf.*	*Pos.*	*≤ 25 mm*
		Accessibility of the occupant and/or an assistant	*Conf.*	*Pos.*	*according to intended use and in range region (according to Fig. 2 and Fig.3)*
		Possibility of operation without use of tools (no adjustment)	*Conf.*	*Pos.*	
	7.2.2.2 V/I Measur.	Foot support gap	*20mm Conf.*	*Pos.*	*≤ 35 mm for adults* *≤ 25 mm for children*
		Presence of the technical means to prevent the occupant's feet from sliding into the gap between foot supports	*Conf.*	*Pos.*	*if distance between foot supports does not meet above mentioned requirements*
7.3.1	**PN-ISO 7176-8**	Static, impact and fatigue strength	*Conf.*	*Pos.*	
7.4.1	**V/I Measur. 7.4.2.2**	Braking system			
		Accessibility and possibility to be operated	*Conf.*	*Pos.*	
		Engaging and disengaging force	*30 N Conf.*	*Pos.*	*requirements on force – see table 1*
	V/I Measur. 7.5.3	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	*Conf.*	*Pos.*	
		Presence of the system enabling to stop the wheelchair/parking brake	*Conf.*	*Pos.*	*drive wheel operated by the occupant allow to stop the wheelchair*
		Possibility to adjust brake	*Conf.*	*Pos.*	
	7.4.2.1 7.4.2.2 7.5.2.2 PN-ISO 7176-3 cl. 7	Effectiveness of parking brake (after fatigue test – 60 000 cycles): Effectiveness of parking brake	*Conf.*	*Pos.*	*requirements on force applied to brakes – specified in table 1*
		- force applied to hand-brakes:	*30N*		
		- force applied to pushed foot brakes	--	*N/A*	
		- force applied to pulled foot brakes	--	*N/A*	
		- effectiveness of braking of the wheelchair facing uphill	*Conf.*	*Pos.*	*no rotation or slide of wheels when the wheelchair is located on inclined plane of 7°*
		- effectiveness of braking of the wheelchair facing downhill	*Conf.*	*Pos.*	
	V/I	Posssibility of adjustement and/or replacement of brake	*Conf.*	*Pos.*	
	V/I Measur.	Location of brake operation mechanism in the region of access by the occupants (Fig. 2)	*Conf.*	*Pos.*	
		Location of brake operation mechanism in the region of access by an assistant (Fig. 3)	*Conf.*	*Pos.*	*If the wheelchair is intended to be operated and driven only by an assistant*
	V/I Measur. ISO 7176-8 7.5.2.1	No deformation, free play or loss of adjustment that adversely affects the function of the wheelchair	*Conf.*	*Pos.*	*60 000 cycles*
7.5.1	**V/I 7.5.2.1**	Fatigue strength of parking brake	*Conf.*	*Pos.*	*60 000 cycles* *f ≤ 0,5 Hz*
7.6.1	**7.6.2 7.4.2.2**	Operating forces	*Conf.*	*Pos.*	*requirements on forces – in table 1, moments- in clause 7.6.1*
7.7.1	**7.7.2 V/I Measur.**	Push handles and handgrip			
		Location of handles	*Conf.*	*Pos.*	*according to Fig. 5*
		Dimensions of handles	*Conf. Ø30mm dl. 80 mm*	*Pos.*	*length ≥ 75 mm, Ø ≥ 20mm and ≤ 50mm*
		Width of grip (length of grip region)	--	*N/A*	*≤ 75mm*

Requirements according to clause	Test method according to clause	Checked characteristics/assemblies/parameters	Real value	Test result	Comments
7.8.1	**ISO 7176-1**	Static stability	*Conf.*	*Pos.*	*Anti-tip supports required at static stability backwards less than 10°*
7.9	**PN-EN 12182**	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*
7.10.1	**EN 1021-1**	Resistance to ignition of upholstered composition parts	*Conf.*	*Pos.*	*required no progressive smouldering ignition or flaming ignition*
7.10.2		Resistance to ignition of foam materials	*Conf.*	*Pos.*	
7.10.3		Resistance to ignition of other parts	*Conf.*	*Pos.*	
7.11.1	**7.11.2 V/I**	Seating adjustments for tilt and recline systems	--	*N/A*	*required warning and/or mechanism precluding seating adjustment while the occupant is seating*
		Accessibility of controls for seating adjustment operated by the occupant	--	*N/A*	*required access region according to Fig. 2*
7.12.1	**7.12.2 V/I Measur.**	Castor stem Rake – inclination angle of castor stem in longitudinal plane (PN-ISO 7176-22:2006, clause 5.1) Cant – inclination angle on castor stem in lateral plane (PN-ISO 7176-22:2006, clause 5.1)	*Conf.*	*Pos.*	■ *rake* $\geq 0^0$ *and* $\leq 2^0$ ■ *cant* $\geq -1^0$ *and* $\leq +1^0$ ■ *the difference between the rake of the left and right castors* $\leq 1^0$ ■ *the difference between the cant of the left and right castors* $\leq 1^0$ *note in service manual*
7.13 EN12184	**EN12184**	Electrically powered ancillary equipment	--	*N/A*	
7.14.1	**7.14.2**	Pushing force	*32 N Conf.*	*Pos.*	*required force ≤ 40N*
8.1	**V/I**	Information supplied by the manufacturer			
		Information and marking conforming EN 12182 available	*Included*	*Pos.*	
		Information and marking conforming ISO7176-15 available	*Included*	*Pos.*	
		Pre-sale information available	*Included*	*Pos.*	
		User information available	*Included*	*Pos.*	
		Service information available	*Included*	*Pos.*	
EN12182 cl. 23	**V/I**	Contents of documentation conforming EN 12182:			
		1) Advice on which other devices and/or types of device can be used in combination and any precautions or limitations needed to ensure user safety, including the following:			
		- warnings and advice about precautions relating to high an/or low temperature of surfaces (cl.10)	--	*N/A*	
		- warnings and advice about precautions relating to safe distances between moving and stationary parts (cl. 12, 13)	*Included*	*Pos.*	
		- instruction on how to fold and/or adjust aids (products) and warnings and advice about precautions needed to avoid hazards (cl. 14)	*Included*	*Pos.*	
		- advice on safe lifting and handling (cl. 20)	*Included*	*Pos.*	
		- the level of protection of electrical equipment against the ingress of liquids and advice on the intended environments of use and related safety recommendations (cl. 9)	--	*N/A*	
		- Information about dangerous combinations of devices	--	*N/A*	

Requirements according to clause	Test method according to clause	Checked characteristics/assemblies/parameters	Real value	Test result	Comments
EN12182 cl. 23	**V/I**	2)- Presence of information intended for use by people with reading difficulties in a form that they can comprehend	--	*N/A*	
		- Presence of information intended for use by persons with visual impairment in a tactile (e.g. Braille) or audio form	--	*N/A*	
		3) Presence of maintenance and cleaning instructions	*Included*	*Pos.*	
		4) Presence of information on the body mass of a disabled person	*Included*	*Pos.*	
		5) Presence of information on precautions and safety use if a technical aid is not flame resisntant and/or does not comply with the flammability requirements (cl. 5.1)	--	*N/A*	
		6a) Presence of information on the intended environments of use and description of the hazards if a technical aid may be affected by electromagnetic emissions	--	*N/A*	
		6b) Presence of information on how to correct any malfunctions	--	*N/A*	
		7) Presence of information describing method and suitable cleaning materials, including any precautions needed to avoid corrosion if a technical aid is intended to be cleaned	*Included*	*Pos.*	
		8) Presence of information describing the method and suitable materials including any precautions needed to avoid corrosion if a technical aid is intended to be disinfected	--	*N/A*	
		9) Presence of information on warnings and advice about precautions relating to high output sound levels if an aid can create a noise hazard	--	*N/A*	
8.2	**V/I**	Contents of pre-sale documentation :			
		a) information on how to obtain the user information in a format appropriate for use by visually impaired people	*Included*	*Pos.*	
		b) description of the intended occupant of the wheelchair	*Included*	*Pos.*	
		c) description of the intended use and the intended environment	*Included*	*Pos.*	
		d) overall dimensions (mm), mass (kg)	*Included*	*Pos.*	
		e) reversing width (mm)	*Included*	*Pos.*	
		f) maximum safe slope (^{0})	*Included*	*Pos.*	
		g) standard options available for the wheelchair	*Included*	*Pos.*	
		h) type of tyres that can be used on the wheelchair	*Included*	*Pos.*	
		i) operator adjustments	*Included*	*Pos.*	
		j) whether and how the wheelchair can be folded or dismantled to assist in storage or transport	*Included*	*Pos.*	
		k) mass of the heaviest part (kg)	*Included*	*Pos.*	
		l) whether the removal of parts or accessories intended by the manufacturer to be removed without the use of tools will have adverse or beneficial effects on the wheelchair	*Included*	*Pos.*	
		m) instructions regarding transport of the wheelchair when it is unoccupied (e.g. in a car or aeroplane)	*Included*	*Pos.*	
		n) information on whether or not the wheelchair is intended to be used as a seat in a motor vehicle and how the standard options covered in g) will affect this	*Included*	*Pos.*	
		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	*Included*	*Pos.*	

Requirements according to clause	Test method according to clause	Checked characteristics/assemblies/parameters	Real value	Test result	Comments
8.3	**V/I**	User information contents			
		- All pre-sale information contents and:	*Included*	*Pos.*	
		a) unique identification number of the wheelchair and information on the location of it	*Included*	*Pos.*	
		b) description of the occupant and/or assistant	*Included*	*Pos.*	
		c) Adjustments before use of the wheelchair and warning of their impact on the wheelchair's stability	*Included*	*Pos.*	
		d) information on any adjustments and who is competent do carry out them	*Included*	*Pos.*	
		e) instructions on operation of all controls, including brakes	*Included*	*Pos.*	
		f) recommended pressure in tyres in kPa or bar	*Included*	*Pos.*	
		g) dealing with tyre punctures	*Included*	*Pos.*	
		h) warning that surface temperature can increase when the wheelchair is exposed to solar radiation	*Included*	*Pos.*	
		i) warning of trapping hazard	*Included*	*Pos.*	
		j) level of resistance to ignition of materials and assemblies	*Included*	*Pos.*	
		k) instruction on engaging and disengaging the drive system (if applicable)	*Included*	*Pos.*	
		l) instruction on dismantling and re-assembly of the wheelchair or removable parts	*Included*	*Pos.*	
		m) massess of parts that can be removed, carried, moved	*Included*	*Pos.*	
		n) points where the component parts can be gripped for safe removing, moving parts during dismantling, assembly or carrying	*Included*	*Pos.*	
		o) information of the recycling of the wheelchair	*Included*	*Pos.*	
		p) Warning if seating or wheels can be set outside safe limit	*Included*	*Pos.*	
		q) expected service life of the wheelchair	*Included*	*Pos.*	
8.4	**V/I**	Service information contents			
		All pre-sale information contents and	*Included*	*Pos.*	
		All user information contents and	*Included*	*Pos.*	
		instructions necessary for the maintenance	*Included*	*Pos.*	
		instructions necessary for the adjustment	*Included*	*Pos.*	
		instructions necessary for the repair	*Included*	*Pos.*	
		instructions necessary for the replacement of parts	*Included*	*Pos.*	
8.5	**V/I**	Labelling (on the wheelchair):			
		a) Of the device for disengagement of the drive system (brakes) including:	*Included*	*Pos.*	
		position: engaged, disengaged	*Included*	*Pos.*	
		a warning that the drive system should be re-engaged before an occupant is left unattended or attempts to operate the wheelchair	*Included*	*Pos.*	
		b) Position of attachment points for wheelchair tie-down and occupant restraint systems if the wheelchair is intended to be used as a seat in a motor vehicle	*Included*	*Pos.*	
		c) year of production of the wheelchair	*Included*	*Pos.*	
		d) A warning that the wheelchair is not intended to be used as a seat in a motor vehicle if it is not intended to be used as a seat in a motor vehicle	*Included*	*Pos.*	

TEST RESULTS according to ISO 7176-1 (unaccredited test method)

Requirements according to clause	Test method according to clause	Checked characteristics/assemblies/parameters	Real value	Test result	Comments
PN-EN 12183	**9.**	Static stability of wheelchair facing up to the slope (backwards)	**) 10,0 °* ***) 17,0°*	*N/R*	*When static stability backwards is below 10° anti-overturn supports are required*
	10.	Static stability of wheelchair positioned backwards up to the slope	***) 15 °*	*N/R*	
	12.	Static stability of wheelchair positioned sideward up to the slope	*16 °*	*N/R*	

NOTE. Measurements were made in the wheelchair with factory regulations and, castor wheel axis tilt - 0°, legrests – 50mm over base

) angle of backrest – 35,5°* *) angle of backrest - 12,5°*

TEST RESULTS according to PN-ISO 7176-2

Requirements according to clause	Test method according to clause	Checked characteristics/assemblies/parameters	Real value	Test result	Comments
4.	**7.1.**	Stability during start and stop when wheelchair drives forwards up to the slope	-	*N/A*	*Testing relates electrically powered wheelchairs*
		Force required to operate hand (or foot) steering mechanism	-	*N/A*	
4.	**7.2.**	Stability of braking during drive forwards and backwards down the slope	-	*N/A*	
4.	**7.3.**	Stability during turning	-	*N/A*	

TEST RESULTS according to PN-ISO 7176-3

Requirements according to clause	Test method according to clause	Checked characteristics/assemblies/parameters		Real value	Test result	Comments
PN-EN 12183 cl 7.4.2.1 Tab. 1	**7.1 V/I Measur.**	Parking brake	Effectiveness of parking brake of wheelchair positioned forwards down the slope	**) Conf. 7,5° Wheel rotate*	*Pos.*	*No rotation or wheel spin when wheelchair is on inclined plane of 7° slope (requirements of PN-EN 12183 cl. 7.4.2.1, Tab. 1)*
PN-EN 12183 cl 7.4.2.1 Tab. 1	**7.1 V/I Measur.**		Effectiveness of parking brake of wheelchair positioned backwards down the slope	**) Conf. 10,0° Wheel rotate*	*Pos.*	
PN-EN 12183 cl 7.4.1, Tab. 1	**PN-EN 12183 cl. 7.2.3 Measur.**		Measurement of force acting on brake lever	*Conf. 30N*	*Pos.*	*Below 60 N force engaging hand-brake is required (requirements of PN-EN 12183 cl. 7.4.2.1, Tab. 1)*
7.2.1.a	**V/I Measur.**	Service brake	Braking distance during drive with maximum speed forwards on horizontal plane	-	*N/A*	*Testing relates electrically powered wheelchairs*
7.2.1.b	**V/I Measur.**		Braking distance during drive backwards on horizontal plane	-	*N/A*	*Testing relates electrically powered wheelchairs*
7.2.1.c	**V/I Measur.**		Braking distance of wheelchair during drive forwards on slope of 5°	-	*N/A*	*Testing relates electrically powered wheelchairs*
7.2.2.	**V/I Measur.**	Resistance of braking system to increased temperature caused by long braking during drive forwards on horizontal plane		-	*N/A*	*Testing relates electrically powered wheelchairs*
7.2.3.a	**V/I Measur.**	Automatic brake	Braking distance of wheelchair during drive with maximum speed forwards on horizontal slope	-	*N/A*	*Testing relates electrically powered wheelchairs.*
7.2.3.b	**V/I Measur.**		Braking distance of wheelchair during drive with maximum speed forwards on slope of 5°	-	*N/A*	*Testing relates electrically powered wheelchairs*

TEST RESULTS according to ISO 7176-4 (unaccredited test method)

Requirements according to clause	Test method according to clause	Checked characteristics/assemblies/parameters	Real value	Test result	Comments
PN-EN 12184 Tabl. 2	**7**	Theoretical energy range	-	*N/A*	*Testing relates electrically powered wheelchairs*

TEST RESULTS according to PN-ISO 7176-5

Test method according to clause	Checked characteristics/assemblies/parameters	Real value	Test result	Comments
5.1	Overall length of wheelchair with legrest and footrest	*995-1055 mm*	*N/R.*	*According to PN-EN 12183 Annex.B and PN-ISO 7193 recommended max overall dimensions length: 1200mm width: 700mm height: 1090mm*
	Overall width	*636 mm*	*N/R.*	
	Overall height with backrest in its prima position	*970-1060 mm*	*N/R.*	
	Overall length of wheelchair without legrest	*760 mm*	*N/R.*	
5.2.	Minimum length of folded wheelchair	*760 mm*	*N/R.*	
	Minimum overall width of folded wheelchair	*305 mm*	*N/R.*	
	Minimum height of folded wheelchair	*970 mm*	*N/R.*	
	Minimum volume of folder wheelchair	*0,23 m^3*	*N/R.*	
6.	Mass	*23,1 kg*	*N/R.*	
7.1	Minimum turning radius	*690 mm*	*N/R.*	
7.2	Width of U-turn limited by spacing of walls	*1120 mm*	*N/R.*	

TEST RESULTS according to PN-ISO 7176 –6

Test method according to clause	Checked characteristics/assemblies/parameters	Real value	Test result	Comments
7.1.	Maximum speed during drive forwards	-	*N/A*	*Testing relates electrically powered wheelchairs*
7.2.	Maximum speed during drive backwards	-	*N/A*	
8.1.	Maximum acceleration	-	*N/A*	
8.2.	Maximum deceleration	-	*N/A*	

TEST RESULTS according to PN-ISO 7176 –7

Test method according to clause	Checked characteristics/assemblies/parameters	Real value	Test result	Comments
7.3.2.	Angle of seat plane	*8,7 °*	*N/R.*	
7.3.3.	Effective depth of seat	*510 mm*	*N/R.*	
7.3.4.	Width of seat	*410 mm*	*N/R.*	
7.3.5.	Effective width of seat	*450 mm*	*N/R.*	
7.3.6.	Height of front edge of seat plane	*560 mm*	*N/R.*	
7.3.7.	Angle of backrest	*$12,5^0/25^0/35,5^0$*	*N/R.*	
7.3.8.	Height of backrest	*380 mm*	*N/R.*	
7.3.9.	Width of backrest	*330 mm*	*N/R.*	
7.3.10.	Moving forward of headrest	-	*N/A*	
7.3.11.	Height of headrest over the seat	-	*N/A*	
7.3.12.	Distance of footrest from seat	*520 mm*	*N/R.*	
7.3.13.	Clearance of footrest	*50 mm*	*N/R.*	
7.3.14.	Length of footrest	*190 mm*	*N/R.*	
7.3.15.	Angle of footrest	*95 °*	*N/R.*	
7.3.16.	Angle of legrest	*87,5 °*	*N/R.*	
7.3.17.	Height of armrests	*175-260 mm*	*N/R.*	
7.3.18.	Moving forward of armrests	*400 mm*	*N/R.*	
7.3.19.	Length of armrests	*330 mm*	*N/R.*	
7.3.20.	Width of armrests	*50 mm*	*N/R.*	
7.3.21.	Angle of armrests	*0,5 °*	*N/R.*	
7.3.22.	Distance between armrests	*435 mm*	*N/R.*	
7.3.23.	Position of the front of armrests	*260 mm*	*N/R.*	
7.3.24.	Diameter of drive wheel	*534 mm*	*N/R.*	
7.3.25.	Diameter of driving wheel	*596 mm*	*N/R.*	
7.3.26.	Displacement of wheel axis horizontally	*50 mm*	*N/R.*	
7.3.27.	Displacement of wheel axis vertically	*205 mm*	*N/R.*	
7.3.28.	Diameter of castor/front wheel	*198 mm*	*N/R.*	

NOTE. Measurements were made in the wheelchair with factory regulations (foto), legrests - 50mm over base

TEST RESULTS according to PN-ISO 7176-8

Requirements according to clause	Test method according to clause	Checked characteristics/assemblies/parameters	Real value	Test result	Comments
4.	**8.4.**	Armrest – resistance to forces acting downwards	*Conf.*	*Pos.*	*loading 940N*
4.	**8.5.**	Footrests - resistance to forces acting upwards	*Conf.*	*Pos.*	*loading 1250N*
4.	**8.6.**	Anti-tip levers	*Conf.*	*Pos.*	*loading 1250N*
4.	**8.7.**	Grips	*Conf.*	*Pos.*	*loading 750N*
4.	**8.8.**	Armrest – forces acting upwards	*Conf.*	*Pos.*	*loading 1120N*
4.	**8.9.**	Footrest – forces acting upwards	*Conf.*	*Pos.*	
4.	**8.10.**	Handle grips for pushing – load acting upwards	*Conf.*	*Pos.*	*loading 1100N*
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.	**9.7.2.**	Frontal part of wheelchair – directly impact	*Conf.*	*Pos.*	*10kg pendulum impact*
4.	**9.7.3.**	Frontal part of wheelchair – displaced impact	*Conf.*	*Pos.*	*10kg pendulum impact*
4.	**10.4.2.**	Testing of manually propelled wheelchair on two-drum machine	*Conf.*	*Pos.*	*200 000 of cycles with full loading of wheelchair (120kg)*
4.	**10.4.3.**	Measurement of initial current for electrically powered wheelchair	-	*N/A*	
4.	**10.4.4.**	Testing of electrically powered wheelchair on two-drum machine	-	*N/A*	
4.	**10.5.**	Drop testing	*Conf.*	*Pos.*	*6666 drops of wheelchair with full loading (120kg) from height of 50mm*

TEST RESULTS according to ISO 7176 –9 (unaccredited test method)

Requirements according to clause	Test method according to clause	Checked characteristics/assemblies/parameters	Real value	Test result	Comments
8	**7.3**	Water resistance	-	*N/A*	*Testing concerns electrically powered wheelchairs*

TEST RESULTS according to PN-ISO 7176 –10

Requirements according to clause	Test method according to clause	Checked characteristics/assemblies/parameters	Real value	Test result	Comments
PN-EN 12184:2002 Tab. 2	**7.1.**	Ability to overcome obstacle during drive forwards	--	*N/A*	*Testing concerns electrically powered wheelchairs*
	7.2.	Ability to overcome obstacle during drive backwards	--	*N/A*	*Testing concerns electrically powered wheelchairs*

TEST RESULTS according to PN-ISO 7176 –14

Requirements according to clause	Test method according to clause	Checked characteristics/assemblies/parameters	Real value	Test result	Comments

NOTE. Testing concerns electrically propeller wheelchairs – performed by Electrotechnical Laboratory

TEST RESULTS according to PN-ISO 7176 –15

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

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

TEST RESULTS according to PN-EN 1021-1:2007

Following test results refer only to inflammability of material compound in special test conditions. They are not intended as criteria for assessment of full potential inflammability risk of ready wheelchair.

Identification data, characteristics, description of the sample of durable covering:	Upholstery made of durable, strengthened nylon in black colour				
Manufacturer of durable covering:	No data				
Identification data, characteristics, description of the sample of foam material/filling:	Foam material, thickness 14mm, 50mm, white colour				
Manufacturer of foam material/filling:	No data				
Test method:	smouldering cigarette				
Requirements concerning cigarette	without filter, length. (68±2)mm, Ø (8±0,5)mm, mass (0,95±0,1)g, speed of smouldering (8±2)min/40mm				
parameters of used cigarette	Marlboro Menthol, length of a cigarette without filter – 59mm, Ø – 7,9mm, weight of cigarette – 0,82g, mass of filter – 0,2g, speed of smouldering – 7min/40mm				
Conditioning of sample:	Temperature:	Measurement	24°C	Requirements	23°C ± 2°C
	Relative humidity of air:		50%		50% ± 5%
	Time:		24 h		24 h
Conditioning of cigarette:	Temperature:		24°C		23°C ± 2°C
	Relative humidity of air:		50%		50% ± 5%
	Time:		20 h		24 h
Test conditions:	Temperature:		22°C		10°C – 30°C
	Relative humidity of air:		50%		15% - 80%

Time of smouldering cigarette:			18 min.	17 min.	18 min.
More important effects noted during testing:			Cigarette 1	Cigarette 2	Cigarette 3
Smouldering criteria	Dangerously spreading out combustion (3.1.a)		NO	NO	NO
	Destruction of tested assembly (3.1.b)		NO	NO	NO
	Smouldering to limit of sample (3.1.c)		NO	NO	NO
	Smouldering at whole thickness (3.1.c)		NO	NO	NO
	Smouldering over 1 hour (3.1.d)		NO	NO	NO
	Presence of active smouldering in final testing (3.1.e)		NO	NO	NO
Combustion criteria		Occurrence of flames (3.2)	NO	NO	NO
Scope of failure of **horizontal** part of upholstery arrangement in mm:			Length: 50	51	55
			Width: 13	11	12
			Depth: 3	3	3
Scope of failure of **vertical** part of upholstery arrangement in mm:			Length: 49	52	55
			Width: 15	13	16
			Depth: 2	3	3
Testing performed by:			Mirosław Szymański		
Date and time of starting test:			30.05.2011, 10^{00}		

Requirements according to PN-EN 12183	Test method according to PN-EN 1021-1	Checked characteristics/assemblies/parameters		Real value	Test result	Comments
7.10.1	**4 9**	Resistance to ignition of upholstered composite parts	Ignition of progressive smouldering type (3.1.a, 3.1.b, 3.1.c, 3.1.d, 3.1.e)	*Conf.*	*Pos.*	*no progressive smouldering*
7.10.1	**4 9**		Flame ignition (3.2)	*Conf.*	*Pos.*	*no progressive smouldering*
7.10.2	**4 9**	Resistance to ignition of foam materials	Ignition of progressive smouldering type (3.1.a, 3.1.b, 3.1.c, 3.1.d, 3.1.e)	*Conf.*	*Pos.*	*no progressive burning by fire*
7.10.2	**4 9**		Flame ignition (3.2)	*Conf.*	*Pos.*	*no progressive burning by fire*

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: Tests were carried out on the wheelchair with adjustment elements set according to recommendations of the manufacturer and according to requirements of PN-ISO 7176-22:2006.
NOTE 3: Sample/object for testing was delivered to the Laboratory by the Orderer.
NOTE 4: Test dummy of mass 120 kg and person of required mass were used for testing.
NOTE 5: Environment temperature for testing - 20^0C.

Final assessment			
PN-EN 12182:2005	***Pos.***	**PN-ISO 7176-7:2001**	***Tested****
PN-EN 12183:2010	***Pos.***	**PN-ISO 7176-8:2002**	***Pos.***
PN-EN 12184:2010	***N/A***	**ISO 7176-9:2001**	***N/A***
ISO 7176-1:1999	***Tested****	**PN-ISO 7176-10:1998**	***N/A***
PN-ISO 7176-2:1998	***N/A***	**PN-ISO 7176-14:2001**	***N/A***
PN-ISO 7176-3:1998	***Pos.***	**PN-ISO 7176-15: 2002**	***Pos.***
ISO 7176-4:1997	***N/A***	**PN-EN 1021-1:2007**	***Pos.***
PN-ISO 7176-5:2001	***Tested****	**PN-ISO 7176-19:2007**	***N/T***
PN-ISO 7176-6:1998	***N/A***		

*) 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

MARKING VERIFICATION

Name of product: *Manual lightweight wheelchair*
DOLPHIN – version BERRACUDA

Applicant: *A-Net s.c.*
93-469 Łódź,
ul. Łaskowice174

Requirement according to PN-ISO 7176-15:2002		**Durable marking on wheelchair**
8.1.a	Name and address of manufacturer	*YES*
8.1.b	Identification of model and serial number	*YES*
8.1.c	Year of production	*YES*
8.1.d	Information on likely driver constraints	*N/A*
8.1.e	Maximum mass of user	*YES*
8.2	Marking of dimension on tyres	*YES*
Requirement according to PN-EN 12183:2010		**Durable marking on wheelchair**
8.5	Labelling of the device for disengagement of the drive system (brakes)	*YES*
	Labelling of brake positions: engaged, disengaged	*YES*
	A warning that the drive system should be engaged before an occupant is left unattended or attempts to operate the wheelchair	*YES*
	Position of attachment points for wheelchair tie-down and occupant restraint systems if the wheelchair is intended to be used as a seat in a motor vehicle	*N/A*
	Year of production of the wheelchair	*YES*
	A warning that the wheelchair is not intended to be used as a seat in a motor vehicle if it is not intended to be used as a seat in a motor vehicle	*YES*
C.2.10	Warnings on anti-tilt device about necessity to inform user if anti-tilt device is mounted	*YES*
	CE marking	*YES*

N/A – not applicable

CONCLUSIONS:
Assessment result of marking product specified above:

Non-conformities with requirements of PN-EN 12183-2010 and PN-ISO 7176-15:2002 were not stated.

- END -

ANNEX 1 TO TEST REPORT No. BR – 087/L-103/2011

Identification of wheelchair elements