Test report No.: PB -14- 158- MP- PA 129 - E - N3

Manual wheelchairs - Requirements and test methods

BERLIN CERT

Test institute:	Berlin Cert - Prüf- und Zertifizierstelle für Medizinprodukte GmbH an der Technischen Universität Berlin Dovestr. 6, D-10587 Berlin Tel.: +49(0)30-314-25111, Fax: -23719	
Client:	HOGGI GmbH, Eulerstrasse 27, D-56235 Ransbach-Baumbach	
Manufacturer:	HOGGI GmbH, Eulerstrasse 27, D-56235 Ransbach-Baumbach	
Test sample:	Type / model:	System-Kinder-RS / SWINGBO-VTi / XL Fahrgestell / **SB 44**
	Quantity / Identification:	1 / 3249-1044-018 / SN 201430250
	Receipt / condition:	2014-08-22 / neu

Test standard:	DIN EN 12183:2009 Manual wheelchairs - Requirements and test methods
Annotation:	The numbering corresponds to the applied standard DIN EN 12183:2009
Classifikation no. according to ISO 9999:2011	12 22 03 Bimanual wheel-propelled wheelchairs Wheelchairs designed to be propelled by the user, by pushing with both hands on the wheels or on the handrims of the wheels.
Accreditation:	Accredited by the "Akkreditiert durch die Deutsche Akkreditierungsstelle GmbH (DAkkS) (Reg.nr.: D-PL-17591-01-01)"
Kind of the test:	Complete test
Test period:	2014-08-27 to 2014-10-29 and 2015-02 and 2015-11 and 2015-12-08
Test location:	Rooms of the test institute
Test result:	The test requirements are fulfilled

established: 2015-12-08

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released: 2015-12-08

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ilac-MRA DAkkS Deutsche Akkreditierungsstelle D-PL-17591-01-01

Explanation to Compliance:
Pass: The tested unit was *found to comply* with the requirements.
No: The tested unit does *not comply* with the requirements.
N/A: The tested unit was *not applicable.*

Test methods and -requirements:	Compliance:			Comments:
	Pass	No	N/A	
5. General requirements				
The wheelchair shall conform to the requirements specified in EN 12182 for the following:				See submitted documents
- intended performance and technical documentation;	☒	☐	☐	and PB-14-158-MP-PA137-E-N1
- aids that can be dismantled;	☒	☐	☐	
- single use fasteners;	☒	☐	☐	
- biocompatibility and toxicity;	☒	☐	☐	
- contaminants and residues;	☐	☐	☒	
- infection and microbiological contamination;	☐	☐	☒	
- overflow, spillage, leakage and ingress of liquids;	☒	☐	☐	
- safety of moving parts;	☒	☐	☐	
- prevention of traps for parts of human body;	☒	☐	☐	
- folding and adjusting mechanisms;	☒	☐	☐	
- surfaces, corners and edges;	☒	☐	☐	
- clinical evaulation;	☒	☐	☐	
- ergonomics;	☒	☐	☐	
A risk analysis shall also be carried out in accordance with EN ISO 14971	☒	☐	☐	
6. Design requirements				
6.1 Foot supports, lower leg supports and arm supports				
The wheelchair shall be fitted with foot supports that have:				
- a means of positioning the occupant's feet at the required height;	☒	☐	☐	
- that prevent the occupant's feet from sliding backwards and	☒	☐	☐	
- that meet the performance requirements specified in 7.2.	☒	☐	☐	
Where fitted, lower leg supports and arm supports shall meet the performance requirements specified in 7.2.	☐	☐	☒	accessories
6.2 Pneumatic tyres				
If the wheelchair is fitted with pneumatic tyres, they shall have:				
- the same type of valve connection on all tyres.	☒	☐	☐	

Test methods and -requirements:	Compliance:			Comments:
	Pass	No	N/A	
- The tyres or the rims shall be marked with the maximum pressure in kPa or bar.	☒	☐	☐	
6.3 Fitting an anterior pelvic support				
The wheelchair shall have provision for an anterior pelvic support to be fitted.	☒	☐	☐	
The manufacturer of the wheelchair shall have available as an option an anterior pelvic support which can be used with that provision.	☒	☐	☐	
6.4 Wheelchairs for use as seats in motor vehicles				
If the manufacturer specifies that the intended use of the wheelchair includes use by an adult as a seat in a motor vehicle, the wheelchair shall conform to the performance requirements of ISO 7176-19.	☐	☐	☒	use as seat in a motor vehicle is not allowed
If the manufacturer specifies that the intended use of the wheelchair includes use as a seat in a motor vehicle by a child of mass greater than 22 kg, the wheelchair shall conform to the performance requirements of ISO 7176-19 with the exception of the horizontal excursion limits and the selection of the Anthropomorphic Test Device (ATD).	☐	☐	☒	
6.5 Braking systems				
The wheelchair shall be fitted with a braking system that meets the performance requirements specified in 7.4.	☒	☐	☐	
If one or more brake levers are fitted to a wheelchair in the form used on bicycles and mopeds, the hand-grip width of such brake levers, measured 15 mm from the end of the brake lever, shall not be greater than 75 mm before a force is applied.	☐	☐	☒	
6.6 Component mass				
If the wheelchair is intended to be dismantled for storage or transportation, any component that requires moving or handling that has a mass greater than 10 kg shall be provided with suitable handling devices (e.g. handles).	☐	☐	☒	
The manufacturer shall provide information indicating the points where such components can be lifted and ...	☐	☐	☒	
... describing how they shall be handled during disassembly, lifting, carrying, and assembly to reduce risks to the person or persons moving or handling them.	☐	☐	☒	
6.7 Operations intended to be carried out by the occupant and/or assistant				
Wheelchairs shall be designed to:				
- facilitate ease of operation by the occupant and/or assistant as specified in	☒	☐	☐	

Test methods and -requirements:	Compliance:			Comments:
	Pass	No	N/A	
the manufacturer's instructions				
and				
- meet the performance requirements of 7.2.1, 7.6.1, 7.7.1, 7.11.1 and 7.14.1.	☒	☐	☐	
In addition, brake levers shall meet the applicable requirements of 7.4.1.	☒	☐	☐	
Examples include: - operation of adjustable seating; - use of detachable components, including removable arm supports, lower leg supports etc., to facilitate safe transfers into and out of the wheelchair; - use of folding mechanisms, including folding frames etc., to facilitate storage and transportation of unoccupied wheelchairs; - carrying out maintenance, including use of tools etc.; - use of braking systems; - use of push handles; and - use of electrical ancillary equipment.				
6.8 Operator controls				
6.8.1 Controls intended for operation by the occupant				
Controls intended to be operated by the occupant while seated shall be within the user reach as shown in Figure 2.	☒	☐	☐	
The following controls, if fitted, are included:				
- brakes intended to be operated by the occupant;	☒	☐	☐	
- seating adjustments;	☐	☐	☒	
- detachable components, including removable arm supports, lower leg supports etc., to facilitate safe transfers into and out of the wheelchair;	☐	☐	☒	
- means of propulsion;	☒	☐	☐	
and				
- electrical ancillary equipment.	☐	☐	☒	
6.8.2 Controls intended for operation by an assistant				
Controls intended to be operated by an assistant shall be within the region specified in Figure 3.				
Examples include: - brakes intended to be operated by an assistant, - seating adjustments, - detachable components, including removable arm supports, lower leg supports etc., to facilitate safe transfers into and out of the wheelchair, - push handles,				

Test methods and -requirements:	Compliance:			Comments:
	Pass	No	N/A	
and - electrical ancillary equipment.				
6.9 Push handles and handgrips				
When fitted, push handles and handgrips shall meet the performance requirements specified in 7.7.	☒	☐	☐	
7. Performance requirements				
7.1 General				
Unless otherwise specified in this clause, the wheelchair shall be prepared as specified in ISO 7176-22 for each test.				
7.2 Foot supports, lower leg support assemblies and arm supports				
7.2.1 Requirements				
Any swing away, movable or removable foot support, lower leg support assembly or arm support fitted on the wheelchair shall				
a) incorporate a means to locate it securely in any intended operating position,				
b) be adjustable in increments not exceeding 25 mm,				
c) be accessible and operable by the occupant or an assistant or both in accordance with the manufacturer's intended usage and within the reach space shown in Figure 2,				
and				
d) be operable without the use of tools.				
When tested as specified in 7.2.2.2, separate foot supports shall have a gap between them that:				
- does not exceed 35 mm if the wheelchair is intended to be occupied by an adult,				
- does not exceed 25 mm if the wheelchair is intended to be occupied by a child, or				
that is fitted with a means to prevent the occupant's feet from sliding into the gap.				
a) incorporate a means to locate it securely in any intended operating position,	☐	☐	☒	accessories
b) be adjustable in increments not exceeding 25 mm,	☒	☐	☐	
c) be accessible and operable by the occupant or an assistant or both.	☒	☐	☐	
d) be operable without the use of tools.	☒	☐	☐	
7.2.2 Tests				
7.2.2.1 Test for general performance				

Test methods and -requirements:		Compliance: Pass	No	N/A	Comments:
a) Fit foot supports, lower leg support assemblies and arm supports in the operating position(s) specified in the manufacturer's instructions.					
b) Adjust the foot supports, lower leg support assemblies and arm supports as specified in the manufacturers' instructions.					
c) Record whether the foot supports, lower leg support assemblies and arm supports met the requirements.					
7.2.2.2 Test for foot support gap					
Simultaneously apply a force F^{+5N} to the centroid of each foot support, normal to the plane of the unloaded foot support. In cases where the foot support has no identifiable plane, apply the force within 5° of vertical.					
variation α of vertical	± 5°				
apply the force for	5 – 10 sec.				
the force applied to each foot support, expressed in newtons	F= m x 0,125 x 9,81m/s²				
shortest gap between foot supports by an adult <35 mm		☐	☐	☒	
shortest gap between foot supports by a child <25 mm		☐	☐	☒	
7.3 Static, Impact and fatigue strength					
The wheelchair shall conform to the requirements of ISO 7176-8.					see test report no.: PB-14-158-MP-PA094-08-E
Arm supports and back supports shall conform to the static loading requirements of ISO 7176-8 in all intended operating positions with the exception of the upward force on a push handle which shall be 880 N.					
Static stregth					
Arm supports: downward force		☐	☐	☒	
Foot supports: downward force		☒	☐	☐	
Tip supports		☐	☐	☒	
Hand grips		☐	☐	☒	
Arm supports: upward force		☐	☐	☒	
Foot supports: upward force		☐	☐	☒	
Push handles: upward force	F = 880N	☒	☐	☐	
Impact strength					
Backrest: Resistance to impact		☒	☐	☐	
Greifreifen: Resistance to impact		☒	☐	☐	
Wheels: Resistance to impact		☒	☐	☐	
Footrests: Resistance to impact		☒	☐	☐	

Test methods and -requirements:	Compliance:			Comments:
	Pass	No	N/A	
Frontstructure: Resistance to impact	☐	☐	☒	
Fatigue strength				
Two-Drum-Test	☒	☐	☐	
Drop-Test	☒	☐	☐	
7.4 Braking system				
7.4.1 Requirements				
The braking system shall:				
- be accessible and operable by the occupant or an assistant or both in accordance with the manufacturer's intended use;	☒	☐	☐	
- have operating forces for engaging and disengaging that do not exceed those stated in Table 1 when tested in accordance with 7.4.2.2;	☒	☐	☐	
- not have parts that protrude above the level of the unoccupied seat when the brake is engaged if the wheelchair is fitted with arm supports that can be moved or removed to enable transfer, when tested according to 7.5.3;	☒	☐	☐	
- include a parking brake that				
1) has provision for adjustment to compensate for any wear to any friction surfaces, tyres, etc., that have been worn to the point of replacement,	☒	☐	☐	
2) meets the parking brake effectiveness requirement in Table 1 when tested according to 7.4.2.1,	☒	☐	☐	
3) has provision for adjustment and/or replacement as specified by the manufacturer, if the parking brake is subject to wear,	☒	☐	☐	
4) has an operating mechanism within the region specified in Figure 2, if the wheelchair is intended to be operated by the occupant,	☒	☐	☐	
5) has an operating mechanism within the region specified in Figure 3 if the wheelchair is intended to be propelled and controlled solely by an assistant,	☐	☐	☒	
6) shall not have moved from the pre-set position and no component or assembly of parts shall have exhibited deformation, free play or loss of adjustment that adversely affects the function of the wheelchair when the wheelchair has been tested as specified in ISO 7176-8 and the parking brake has been operated for 60 000 cycles as specified in 7.5.2.1.	☒	☐	☐	

Test methods and -requirements:	Compliance:			Comments:
	Pass	No	N/A	
7.4.2 Tests				
7.4.2.1 Test for determination of effectiveness of parking brakes				
a) Adjust the parking brake in accordance with the manufacturer's instructions without exceeding the operating force requirements stated in Table 1.				
b) Test the loaded wheelchair facing uphill as specified in ISO 7176-3, with the test plane inclined to the horizontal at $(7^{+1})°$, or at the maximum safe slope specified by the manufacturer if it is greater.				
c) Repeat b) with the wheelchair facing downhill.				
d) Determine whether the parking brakes hold the loaded wheelchair stationary on the slope.	☒	☐	☐	
7.4.2.2 Test for determination of brake lever operating forces				
a) Adjust the brakes as specified by the manufacturer.				
b) Select the part of the lever through which the force is to be applied as shown in Figure 4.				
1) If the lever is fitted with a generally spherical knob, apply the force through the centre of the knob.				
2) If the lever is tapered, apply the force through the point where the largest cross section intersects the centre line of the lever.				
3) If the lever is parallel or any shape other than those above, apply the force through a point on the centre line of the lever 15 mm below the top.				
4) If the form of the lever is such that the lever is gripped by the whole hand apply the force through the centre line of the lever 15 mm from the end.				
5) If the brake is operated by pushing or pulling a bar or pad, apply the force to the centroid of the bar or pad.				
c) Apply the brakes while measuring the force with the device specified in 4.4 aligned in the direction of travel of the point of application of the force in order to measure the maximum application force required.				
d) Release the brakes and measure the force with the device as specified in 4.4 aligned in the direction of travel of the point of application of the force in order to measure the maximum releasing force required.				measured: 10,9 N 10,5 N 10,7 N
e) Perform c) and d) three times in total and record the measurements.				
f) Calculate and record the arithmetic mean value of the application and the release forces measured.				arithmetic mean: 10,7 N
g) Determine whether the requirements for the operating	☒	☐	☐	

Test methods and -requirements:	Compliance:			Comments:
	Pass	No	N/A	
forces stated in Table 1 have been met.				
7.5 Fatigue strength of manually operated parking brakes				
7.5.1 Requirements				
The brake mechanism shall not have moved from the pre-set positions, no component or assembly of parts shall exhibit deformation, free play or loss of adjustment that adversely affects the function of the wheelchair when:				
a) the wheelchair has been tested as specified in ISO 7176-8;	☒	☐	☐	
b) the parking brake has been operated for 60 000 cycles as specified in 7.4.1.	☒	☐	☐	
7.5.2 Tests				
7.5.2.1 Fatigue test				
a) Adjust the parking brakes in accordance with the manufacturer's instructions without exceeding the operating force requirement stated in Table 1.				
b) Carry out the test with the parking brake mounted on the wheelchair.				
c) Move the lever of the brake smoothly from the non-braking position to the braking position for 60 000 cycles at a frequency not greater than 0,5 Hz (4.10).				
d) Inspect the brake mechanism to determine whether it has moved from the pre-set position,	☒	☐	☐	
or				
Whether any component or assembly of parts shows visible signs of cracks, breakages, gross deformations, free play or loss of adjustment that adversely affects the function of the wheelchair.	☒	☐	☐	
7.5.2.2 Effectiveness of brakes after fatigue strength testing				
a) Following completion of the fatigue test adjust the parking brakes in accordance with the manufacturer's instructions without exceeding the operating force requirements stated in Table 1.				
b) Repeat the test specified in 7.4.2.1.	☒	☐	☐	
7.5.3 Test method for protrusion of parts of the brake				
To test for protrusion of parts of the parking brake above the level of the unoccupied seat, perform the following:				
a) Engage the brake.				
b) Move or remove the arm support to enable transfer.				

Test methods and -requirements:	Compliance:			Comments:
	Pass	No	N/A	
c) Check whether any part of the brake protrudes above the level of the seat.	☒	☐	☐	
7.6 Operating force				
7.6.1 Requirements				
All controls shall have operating forces for engaging and releasing that do not exceed those stated in Table 1 when tested in accordance with 7.6.2. Brake operating levers shall be tested in accordance with 7.4.2.2. In addition to achieve the intended function of the system or device being operated, turning knobs operated by one hand shall have:				
a) the numerical value of the torque, expressed in Nm, for knobs greater than or equal to 25 mm in diameter shall not be greater than 0,05 times the numerical value of the diameter of the knob, expressed in mm, where the force is transmitted by friction,	☐	☐	☒	
and				
b) the numerical value of the torque, expressed in Nm, for knobs less than 25 mm diameter shall not be greater than 0,025 times the numerical value of the diameter of knob, expressed in mm.	☐	☐	☒	
7.6.2 Test				
a) Position a means to apply force or torque as applicable:				
1) where the operation is performed by pushing or pulling, position the means to apply force parallel to the direction of operation and in the middle of the knob or button;				
2) in the case of a lever, position the means to apply force at a distance of 15 mm from the end of the operating lever;				
3) for a turning knob, use a suitable means (e.g. a force gauge) to position the means to measure torque concentrically on the knob.				
b) Gradually increase the force or torque until the intended function of the system or device as specified by the manufacturer's instructions is achieved.				
c) Measure and record the maximum operating force.				
d) Perform b) to c) three times in total.				
e) Calculate and record the arithmetic mean of the three recorded measurements.				
7.7 Push handles and handgrips				
7.7.1 Requirements				
When push handles are fitted, no part of the wheelchair				

Test methods and -requirements:	Compliance:			Comments:
	Pass	No	N/A	
shall lie within a space to the rear of the wheelchair bounded by the following:				
a) a plane at 85° to the horizontal, that touches the rearmost points of the push handles as shown in Figure 5;	☒	☐	☐	
b) two planes not less than 350 mm apart equidistant from a vertical plane parallel to the forward direction of travel that bisects the wheelchair;				
c) the horizontal test plane.				
When the wheelchair is fitted with steering and/or manoeuvring handgrips for assistant use, the handgrips shall be at least 75 mm in length and between 20 mm and 50 mm in diameter.	☒	☐	☐	
When manoeuvring handgrips are fitted with controls that are intended to be used by being gripped by one hand, the handgrip width needed to grip them shall be no greater than 75 mm.	☒	☐	☐	
7.7.2 Test				
a) Place the wheelchair on the horizontal test plane.				
b) Project the planes specified in 7.7.1 and determine whether any part of the wheelchair lies within the enclosed space.				
c) Measure the dimensions of the steering and/or manoeuvring handgrips.				measured: Ø = 35 mm
d) Where applicable, measure the grip width of the controls fitted to the manoeuvring handgrips that are intended to be used by being gripped by one hand.				
e) Record whether the wheelchair meets the requirements.	☒	☐	☐	
7.8 Static stability				
7.8.1 Requirements				
The wheelchair shall have provision for anti-tip devices if the static stability is less than 10°.	☒	☐	☐	see notes page 18
7.8.2 Test				
Test the loaded wheelchair as specified in ISO 7176-1. Use the angles recorded in Table 4 of ISO 7176-1 to establish whether provision for anti-tip devices is required, and, if so, determine whether the wheelchair has such provision.	☒	☐	☐	
7.9 Surface temperature				
Surfaces of the wheelchair that can come into direct contact with the occupant's skin and/or an assistant's skin during normal use and that are within the envelopes illustrated in Figure 2 and Figure 3 shall not exceed 41 °C when tested as specified in EN 12182. If an	☒	☐	☐	

Test methods and -requirements:	Compliance:			Comments:
	Pass	No	N/A	
ambient temperature is not specified, test at an ambient temperature of 20 °C ± 2 °C.				
7.10 Resistance to ignition				
7.10.1 Upholstered composite parts				
For upholstered parts which are composites of cover and filling, with or without a support base or interliner, the complete composite shall be tested by the methods specified in EN 1021-1 and EN 1021-2.				
Progressive smouldering ignition and flaming ignition as defined in these European Standards shall not occur.	☒	☐	☐	
7.10.2 Foam materials				
For foam materials which form all or part of a seat, back support, postural support, arm support or lower leg support and which consist of foam material with or without an integral skin, the material of each part shall be tested with the source applied centrally to the material face that contacts the occupant by the methods specified in EN 1021-1 and EN 1021-2.				
Progressive smouldering ignition and flaming ignition as defined in these European Standards shall not occur.	☒	☐	☐	
7.10.3 Other parts				
For sling seats, sling backs, belts, restraint harnesses, foot supports, and clothing guards, the material of each item shall be tested with the source applied centrally to the material face that contacts the occupant by the methods specified in EN 1021-1 and EN 1021-2.				
Progressive smouldering ignition and flaming ignition as defined in these European Standards shall not occur.	☐	☐	☒	
7.11 Seating adjustments for tilt and recline systems				
7.11.1 Requirements				
If the manufacturer specifies that the seating can be adjusted by an assistant or the occupant or both while the occupant is seated, the assistant and/or the occupant shall not have to lift a mass (e.g. the combined mass of the occupant and the seating) which presents a moving and handling safety hazard to the assistant and/or the occupant.	☒	☐	☐	
Controls for seating adjustments intended to be operated by the occupant shall be accessible to the occupant from all seating positions.	☐	☐	☒	
7.11.2 Test method				
Adjust the seating as specified in the manufacturer's instructions.				
Record whether the wheelchair meets the requirements.	☒	☐	☐	

Test methods and -requirements:	Compliance:			Comments:
	Pass	No	N/A	
7.12 Castor stem				
7.12.1 Requirements				
The castor rake shall be (0+2)° and the difference between the rake of the left and right castors shall not exceed 1°.	☒	☐	☐	
The castor cant shall be (0 ± 1)° and the asymmetry between left and right castor cant shall not exceed 1°.	☒	☐	☐	
If the positions of the rear wheels and/or the positions of the castor assemblies are adjustable, and the castor rake is affected by the movement of these adjustable parts, the castor rake shall be adjustable to (0^{+2})° for all positions of the rear wheels and/or the castor assemblies.	☐	☐	☒	
7.12.2 Test				
a) Position the loaded wheelchair on the horizontal test plane.				
b) Measure all castor rakes and castor cants to an accuracy of 0,1°.				
c) If the positions of the rear wheels and/or the positions of the castor assemblies are adjustable, and the castor rake is affected by the movement of these adjustable parts, verify that the castor rake can be adjusted to (0^{+2})° for all positions of the rear wheels and/or the castor assemblies.				
d) Record whether the wheelchair meets the requirements.	☒	☐	☐	
7.13 Electrically powered ancillary equipment				
If the wheelchair is fitted with electrically powered ancillary equipment, the wheelchair combined with the ancillary equipment shall conform to the applicable requirements and test methods of EN 12184.	☐	☐	☒	
7.14 Pushing force				
7.14.1 Requirements				
When determined in accordance with 7.14.2, the pushing force required to start the loaded wheelchair moving and to maintain a constant speed on a horizontal surface shall not exceed 40 N.	☒	☐	☐	
7.14.2 Test				
a) Make provisions for applying a horizontal force in the forward direction of travel and along the longitudinal centreline of the wheelchair as follows:				
- where push handles are fitted, to the push handles;				
- where push handles are not fitted and the wheelchair				

Test methods and -requirements:	Compliance:			Comments:
	Pass	No	N/A	
has a flexible back support, to a point 15 mm ± 5 mm below the top of the back support; or				
- where the back support is rigid, to a point 15 mm ± 5 mm below the top of the back support.				
b) Place the loaded wheelchair on the horizontal test plane.				
c) Set up a means to apply a force to start the wheelchair moving and to maintain the wheelchair moving forwards at a speed of 1,0 m/s ± 0,1 m/s so that the direction of the force is maintained within the following limits throughout the test:				
- horizontal ± 5°;				
- at the height of the point to which the force is applied, and parallel to the forward direction of travel of the wheelchair ± 5°;				
- within 5 mm of the longitudinal centre line of the wheelchair.				
d) Apply the force, and increase it at a rate not greater than 5 N/s until the wheelchair starts to move.				
e) Accelerate the wheelchair to a speed of 1,0 m/s ± 0,1 m/s over a distance not less than 0,5 m. After the acceleration is complete, measure and record the force needed to maintain the wheelchair in motion at a constant speed of 1,0 m/s ± 0,1 m/s over a distance not less than 2,5 m.				
f) Maintain the direction of the force within the limits specified above during the whole test procedure.				
g) Perform the test six times in the forward direction of the wheelchair. Carry out the tests on the same area of the test track, three times in one direction and three times in the opposite direction.				Measured: 24, 28, 21, 21, 25, 27 (N)
h) Calculate the arithmetic mean value of the forces measured.				arithmetic mean: 24 N
8. Requirements for information supplied by the manufacturer				
8.1 General				
Each wheelchair shall be provided with documentation and labelling that conform to the requirements in EN 12182 and ISO 7176-15.	☒	☐	☐	
In addition the manufacturer shall provide the documentation in three separate sections: pre-sale, user and servicing information as specified in 8.2, 8.3, 8.4. These may be provided as separate printed documents or in other forms of media to meet the needs of individual occupants or their assistants.	☒	☐	☐	

Test methods and -requirements:	Compliance:			Comments:
	Pass	No	N/A	
8.2 Pre-sale information				
In addition to the requirements of 8.1, pre-sale information shall include the following:				
a) information on how to obtain the user information in a format appropriate for use by visually impaired people;	☒	☐	☐	
b) description of the intended occupant of the wheelchair (as a minimum this will include occupant mass plus any specific requirements for functional capability, visual ability and cognisance to operate the wheelchair safely in its intended environment);	☒	☐	☐	
c) description of the intended use and the intended environment;	☒	☐	☐	
d) overall dimensions (width, length and height) of the wheelchair, expressed in millimetres, and its mass, expressed in kilograms, when it is ready for use and, if applicable, when it is folded or dismantled;	☒	☐	☐	
e) reversing width, expressed in millimetres;	☒	☐	☐	
f) maximum safe slope, expressed in degrees;	☒	☐	☐	
g) standard options that are available for the wheelchair;	☒	☐	☐	
h) type of tyres that can be used on the wheelchair;	☒	☐	☐	
i) operator adjustments;	☒	☐	☐	
j) whether and how the wheelchair can be folded or dismantled to assist in storage or transport;	☒	☐	☐	
k) if the wheelchair can be dismantled or has any removable parts; the mass of the heaviest part, expressed in kilograms;	☒	☐	☐	
l) information concerning 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;	☐	☐	☒	
m) instructions regarding transport of the wheelchair when it is unoccupied (e.g. in a car or aeroplane);	☒	☐	☐	
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;	☒	☐	☐	
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.	☐	☐	☒	
8.3 User information				
User information shall be provided by the manufacturer with each wheelchair. Further copies shall also be available for any subsequent user of the wheelchair.				

Test methods and -requirements:	Compliance:			Comments:
	Pass	No	N/A	
User information shall contain all pre-sale information and the following:				
a) unique identification number of the wheelchair and information on the location of the unique identification number on the wheelchair;	☒	☐	☐	
b) intended operator (occupant, assistant or both);	☒	☐	☐	
c) any adjustment or settings required before the wheelchair can be used and warnings of how adjustments or settings affect stability;	☒	☐	☐	
d) where applicable, information on any adjustments that can be made and who is competent to carry out these adjustments;	☒	☐	☐	
e) instructions on operation of all controls, including brakes;	☒	☐	☐	
f) wheelchair manufacturer's recommended tyre pressure(s), expressed in kilopascals (kPa), or bar;	☒	☐	☐	
g) instructions for dealing with tyre punctures, where pneumatic tyres are fitted;	☒	☐	☐	
h) warning that surface temperatures can increase when the wheelchair is exposed to external sources of heat (e.g. sunlight);	☒	☐	☐	
i) warning for trapping hazards (e.g. pinch points);	☒	☐	☐	
j) level of resistance to ignition of materials and assemblies;	☒	☐	☐	
k) instructions on how to engage and disengage the drive system, if applicable;	☐	☐	☒	
l) instructions on dismantling and re-assembly of the wheelchair or any removable parts;	☒	☐	☐	
m) masses of parts of the wheelchair that are expected to be handled during dismantling, reassembly, or carrying, expressed in kilograms;	☒	☐	☐	
n) 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;	☒	☐	☐	
o) information on the recycling of the wheelchair;	☒	☐	☐	
p) warning, if the adjustments of seating or wheel positions can be set outside safe limits;	☒	☐	☐	
q) expected service life of the wheelchair.	☒	☐	☐	
8.4 Service information				
The service information shall contain all the pre-sale, user information and instructions necessary for the	☒	☐	☐	

Test methods and -requirements:	Compliance:			Comments:
	Pass	No	N/A	
maintenance, adjustment and repair of the wheelchair and for the replacement of parts.				
8.5 Labelling				
In addition to the requirements of 8.1, the manufacturer shall apply permanent labels for the following:				
a) 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;	☐	☐	☒	
b) for wheelchairs where the intended use includes use as a seat in a motor vehicle, the position of attachment points for wheelchair tie-down and occupant restraint systems (WTORS);	☐	☐	☒	
c) year of production of the product;	☒	☐	☐	
d) for wheelchairs not intended to be used as a seat in a motor vehicle, a warning label that it is not intended to be used as a seat in a motor vehicle.	☒	☐	☐	

Technical data:	
Max. body weight of the user:	75 kg
Overall weight:	21 kg
Overall dimensions (l x w x h):	970 x 700 x 1220 mm
Height of seat plane (cutting edge):	490 mm
Seat width / - length / height of backrest:	440 / 500 / 590
Inclination seat (angle):	-5° - +45°
Inclination backrest:	/
Drive wheels:	22"
Front wheels:	∅ 122

Testequipments:		used
PM 3081	Digitaler Messschieber 150 mm	☒
PM 3082	Digitaler Messschieber 150 mm	☐
PM 3034	Neigungsmesser - digital	☒
PM 1012	Kipp-Plattform	☒
PM 1013	Rampe	☒
PM 3060	Elektronische Kranwaage	☒
PM 3114	Maßband	☒
PM 1046	Hydraulikprüfstand (Käfig)	☒
PM 3024	Kraftmessdose	☒
PM 1064	ISO-Dummy / Aufnahme	☒
PM 1054	Exzenterprüfstand 1	☒
PM 1055	Exzenterprüfstand 2	☐
PM 0058	Drop-Test-Machine	☒
PM 0079	Handrim impact test pendulum	☒
PM 3056	Pendel für Rückenlehnen-Schlagprüfung	☒
PM 3045	elektronisches Handkraftmessgerät	☒
PM 1034	Geschwindigkeitsmesssystem	☐

Submitted documents:	
User information	12-2014
Pre-sale information	12-2014
Service information	12-2014
Skin compatibility	Test report HYGCEN SN 17325, 22.07.2014
Skin compatibility	Test report HYGCEN SN 12252, 19.07.2011
Flammability	Certificate EN 1021-1,2, No.: 13-059, 30.08.2013, TZU Brno
Clinical evaluation	29.09.2014
Risk analysis	09.12.2014, Rev. V2.0
Test report	PB-15-264-MP-PA094-01, Berlin Cert GmbH, 2015-11-27

Notes:

Point 7.8: The static stability is in rearward direction less than 10°.

A representative test sample System-children-wheelchair / SWINGBO-Vti / XL chassis / SB 44 was chosen for the test. The mentioned results are applicable to the models SWINGBO-Vti / XL chassis / SB 40 and SWINGBO-Vti / XL chassis / SB 36 and SWINGBO-Vti / XL chassis / SB 34 and SWINGBO-Vti / XL chassis / SB 32 and SWINGBO-Vti / XL chassis / SB 30 and SWINGBO-Vti / XL chassis / SB 28 and SWINGBO-Vti / XL chassis / SB 26 and SWINGBO-Vti / XL chassis / SB 24 of the FA. HOGGI GmbH.

N2 = The model with the seat width 24 was integrated.

N3 = The models with the seat widths 26, 28, 30, 32 and 34 was integrated.

With the version N-3 the previous test reports are invalid.