



Clause --- Prüfpunkt	Requirement + Test --- Anforderung + Prüfung	Result - Remark --- Ergebnisse – Bemerkungen	Verdict Wertung						
Impact strength (ISO 7176-8, section 9)									
Backrest									
	(only for wheelchairs with a backrest > 320 mm) The mass is touching the backrest at a point 30 mm below the top of the backrest. The pendulum is supported so that the rigid bar is at an angle of $30^\circ \pm 2^\circ$ to the vertical and then it falls freely and strikes the back of the wheelchair		P						
	For wheelchairs where the backrest is mounted on two supporting members the test is repeated twice with the pendulum repositioned so that it strikes the central line of each backrest support 20 mm below the top of the backrest.		N						
	For wheelchairs where the backrest is mounted on a single central support the test is repeated with the pendulum positioned to strike the backrest points located 0.4 times the backrest max. width from each side of its centreline.		N						
Castors									
	<p>The castor is set up so that it is to be tested aligned at $45^\circ \pm 5^\circ$ to the longitudinal axis of the wheelchair.</p> <p>The plane of the pendulum's swing has to be in the plane of the castor wheel $\pm 2^\circ$.</p> <p>The pendulum is located so that it is hanging vertically with its centre of percussion of one side face on the same horizontal line as the castor hub $\pm 5^\circ$ and touching the wheel rim.</p> <p>The angle of swing is calculated from following equation:</p> $\cos \theta = 1 - \frac{M_d + M_w}{377}$ <p>with: θ = angle of swing in degrees M_d = max. dummy mass in kg M_w = wheelchair mass in kg</p> <p>The pendulum is raised so that its longitudinal axis is at $\theta + 3^\circ$ to the vertical and then it is released so that it strikes the castor wheel. If the manufacturer claims that the wheelchair exceeds the min. requirement the angle claimed by the manufacturer with a tolerance of $+3^\circ$ is used.</p> <p>The test is repeated on all other castors of the wheelchair</p>	<table border="1"> <tr> <td>M_d</td> <td>160 kg</td> </tr> <tr> <td>M_w</td> <td>134 kg</td> </tr> <tr> <td>θ</td> <td>77°</td> </tr> </table>	M_d	160 kg	M_w	134 kg	θ	77°	P
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Footrests			
	<p>a) Lateral impact</p> <p>The footrest test pendulum is suspended so that its centre of percussion touches that part of the footrest which is nearest to the test plane and furthest from the wheelchair longitudinal centreline, its plane of swing in normal to the wheelchair longitudinal centreline $\pm 2^\circ$ and the longitudinal axis of the pendulum is vertical.</p> <p>The pendulum is raised so that its longitudinal axis is at θ^{+3° to the vertical and released so that it strikes the footrest. If the manufacturer claims that the wheelchair exceeds the above requirement the angle claimed by the manufacturer with a tolerance of $+3^\circ$ is used.</p> <p>If the footrest has moved from its setting but is undamaged, reset it to its initial position.</p>		P
	<p>b) Longitudinal impact</p> <p>The footrest pendulum is suspended so that its centre of percussion touches that part of the footrest which is furthest forward and furthest from the wheelchair longitudinal centreline; its plane of swing is parallel to the wheelchair longitudinal centreline; the longitudinal axis of the pendulum is vertical.</p>		P
Front side			
	<p>The vertical pendulum impacts the front side at the position, which protrudes the most. The pendulum is suspended by an angle of θ^{+3° - resp. if the manufacturer claims that the wheelchair exceeds the above requirement the angle claimed by the manufacturer with a tolerance of $+3^\circ$ is used - and dropped.</p>		N
Fatigue tests (ISO 7176-8, section 10)			
Two-Drum-Test			
	<p>The reference drum surface shall run at 1.0 m/s $\pm 0,1$ m/s.</p> <p>The test is finished, when the drum had run 200.000 revolutions or any higher figure claimed by the manufacturer.</p>		P
Drop-Test			
	<p>The wheelchair is dropped freely from a height of 50 mm ± 5 mm.</p> <p>The test is finished, when the process had been repeated 6.666 time resp. if the manufacturer claims that the wheelchair exceeds the min. requirement, 1/30 times the number of cycles of the two-drum test.</p>		P



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8.4	Braking system										
8.4.1	General requirements										
	a) The braking system shall										
	be accessible and operable by the occupant or an assistant or both in accordance with the manufacturer's intended use;		P								
	be within the reach specified in Figure 2, if it is intended to be operated by the occupant;		P								
	have operating forces for engaging and disengaging that do not exceed those stated in Table 1 when tested in accordance with 8.4.2.1;	<table border="1"> <tr> <td>1</td> <td>23 N</td> </tr> <tr> <td>2</td> <td>21 N</td> </tr> <tr> <td>3</td> <td>25 N</td> </tr> <tr> <td>average</td> <td>23 N</td> </tr> </table>	1	23 N	2	21 N	3	25 N	average	23 N	P
1	23 N										
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	include a running brake, which operates independently of tyre wear and tyre inflation pressure and when tested according to 8.4.2.2 does not exceed the maximum stopping distance specified in Table 2 (e.g. manual brake control or control device);		P								
	include a running brake which, when operated with the wheelchair in freewheel mode, shall bring the wheelchair to a stop;		P								
	include an automatic brake, which operates independently of tyre wear and tyre inflation pressure and is operated by releasing the control device to achieve a zero speed command (e.g. spring loaded disc brake);		P								
	include a parking brake which operates independently of tyre wear and tyre inflation pressure (e.g. drum brake in wheels, spring loaded disc) that shall										
	1. be operable when there is no power from the battery supplying the drive system,		P								
	2. be operable when the wheelchair is in freewheel mode,		P								
	3. meet the parking brake effectiveness requirement in Table 1 when tested according to 8.4.2.3 and, after testing as specified in b), when tested according to 8.4.2.6,		P								
	4. have provision for adjustment and/or replacement as specified by the manufacturer, if the parking brake is subject to wear,		P								
	5. not have parts that protrude above the level of the unoccupied seat when the brake is engaged, if the wheelchair is fitted with arm		P								



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	supports that can be moved or removed to enable transfer when tested according to 8.4.2.4,																																																				
	6. be operated either by hand or foot, and not exceed the brake lever operating forces specified in Table 1 when tested in accordance to 8.4.2.1,		P																																																		
	7. not allow the loaded wheelchair to slide nor for its wheels to rotate when tested as specified in ISO 7176-3:2003 on the maximum safe slope established by Table 1 or on the maximum safe slope specified by the manufacturer if greater, when facing <ul style="list-style-type: none"> • up the slope and • down the slope. 		P																																																		
	b) No brake mechanism shall have moved from the pre-set position, no component or assembly of parts shall exhibit 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 7176-8:1998 and		P																																																		
	the parking brake has been operated for 60 000 cycles as specified in 8.4.2.5.		P																																																		
8.4.2.2	Test for the determination of the effectiveness of running brakes <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Test plane inclination</th> <th>Direction of travel</th> <th></th> <th>N</th> <th>R</th> <th>E</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Horizontal</td> <td>Forwards</td> <td>Min. brake distance [m]</td> <td>1.9</td> <td>1,75</td> <td>1.70</td> </tr> <tr> <td>Reverse</td> <td>Min. brake distance [m]</td> <td>0.6</td> <td>0.3</td> <td>0.2</td> </tr> <tr> <td rowspan="2">3°</td> <td>Forwards</td> <td>Min. brake distance [m]</td> <td>--</td> <td>--</td> <td>--</td> </tr> <tr> <td>Reverse</td> <td>Min. brake distance [m]</td> <td>--</td> <td>--</td> <td>--</td> </tr> <tr> <td rowspan="2">6°</td> <td>Forwards</td> <td>Min. brake distance [m]</td> <td>--</td> <td>--</td> <td>--</td> </tr> <tr> <td>Reverse</td> <td>Min. brake distance [m]</td> <td>--</td> <td>--</td> <td>--</td> </tr> <tr> <td rowspan="2">10°</td> <td>Forwards</td> <td>Min. brake distance [m]</td> <td>5.0</td> <td>5.0</td> <td>5.0</td> </tr> <tr> <td>Reverse</td> <td>Min. brake distance [m]</td> <td>0.8</td> <td>0.38</td> <td>0.35</td> </tr> </tbody> </table>		Test plane inclination	Direction of travel		N	R	E	Horizontal	Forwards	Min. brake distance [m]	1.9	1,75	1.70	Reverse	Min. brake distance [m]	0.6	0.3	0.2	3°	Forwards	Min. brake distance [m]	--	--	--	Reverse	Min. brake distance [m]	--	--	--	6°	Forwards	Min. brake distance [m]	--	--	--	Reverse	Min. brake distance [m]	--	--	--	10°	Forwards	Min. brake distance [m]	5.0	5.0	5.0	Reverse	Min. brake distance [m]	0.8	0.38	0.35	P
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8.6	Assistant control unit, push handles and handgrips																																																	
8.6.1	Requirements																																																	
	When an assistant control unit is fitted, the unit shall be positioned behind the wheelchair's back support, between 900 mm and 1 200 mm from the floor to the centre of the operating means for the control device (e.g.joystick handle).		N																																															
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	to support the assistant's hand or hands used to operate the control device while the wheelchair is being driven shall be fitted.															
	When push handles are fitted, no part of the wheelchair shall lie within a space to the rear of the wheelchair bounded by the following:															
	- a plane at 85° to the horizontal, that touches the rearmost points of the push handles as shown in Figure 4;		N													
	- two planes not less than 350 mm apart equidistant from a vertical plane parallel to the forward direction of travel that bisects the wheelchair;		N													
	- the horizontal test plane.		N													
	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.		N													
	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 (see Figure 1).		N													
8.7	Charging connector															
8.7.1	Requirements															
	The charging connector shall be accessible and operable by the occupant and assistant within the region specified in Figure 2 when operated as specified in the manufacturer's instructions.		P													
8.8	Performance of driving characteristics															
8.8.2	Ability to climb maximum safe slope		P													
	<table border="1"> <tr> <td>max. safe slope [°]</td> <td>10</td> </tr> <tr> <td>speed [km/h]</td> <td>9.0</td> </tr> </table>	max. safe slope [°]	10	speed [km/h]	9.0											
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	speed on the horizontal [km/h]	10.09																																											
	max. speed on max. safe slope [km/h]	12.2																																											
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8.8.7	Static stability (acc. to 7176-1:1999) <table border="1"> <thead> <tr> <th colspan="2" rowspan="2">Stability direction</th> <th colspan="3">Tipping angle</th> </tr> <tr> <th>Least stable</th> <th>Most stable</th> <th>Seattilt: 4°, Backresttilt: 20°</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Forward</td> <td>Front wheels locked</td> <td>12.8° sliding</td> <td>16.6° sliding</td> <td>15.1° sliding</td> </tr> <tr> <td>Front wheels unlocked</td> <td>19.6°</td> <td>19.6°</td> <td>19.6°</td> </tr> <tr> <td rowspan="2">Rear</td> <td>Rear wheels locked</td> <td>14.4° tilting</td> <td>19.6°</td> <td>18.5° tilting</td> </tr> <tr> <td>Rear wheels unlocked</td> <td>19.6°</td> <td>19.6°</td> <td>19.6°</td> </tr> <tr> <td rowspan="2">Sideways</td> <td>Left</td> <td>19.6°</td> <td>19.6°</td> <td>19.6°</td> </tr> <tr> <td>Right</td> <td>19.6°</td> <td>19.6°</td> <td>19.3° sliding</td> </tr> </tbody> </table>		Stability direction		Tipping angle			Least stable	Most stable	Seattilt: 4°, Backresttilt: 20°	Forward	Front wheels locked	12.8° sliding	16.6° sliding	15.1° sliding	Front wheels unlocked	19.6°	19.6°	19.6°	Rear	Rear wheels locked	14.4° tilting	19.6°	18.5° tilting	Rear wheels unlocked	19.6°	19.6°	19.6°	Sideways	Left	19.6°	19.6°	19.6°	Right	19.6°	19.6°	19.3° sliding	P
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8.8.8	Maximum speed <table border="1"> <thead> <tr> <th rowspan="2"></th> <th colspan="3">Type Class</th> <th>Result - Remark</th> </tr> <tr> <th>A</th> <th>B</th> <th>C</th> <th></th> </tr> </thead> <tbody> <tr> <td>Forward horizontal</td> <td>15 km/h</td> <td>15 km/h</td> <td>15 km/h</td> <td>10.09 km/h</td> </tr> <tr> <td>Reverse horizontal</td> <td>70 % of maximum forward speed of the wheelchair or 5 km/h whichever is lower</td> <td>70 % of maximum forward speed of the wheelchair or 5 km/h whichever is lower</td> <td>70 % of maximum forward speed of the wheelchair or 5 km/h whichever is lower</td> <td>4.75 km/h</td> </tr> </tbody> </table>			Type Class			Result - Remark	A	B	C		Forward horizontal	15 km/h	15 km/h	15 km/h	10.09 km/h	Reverse horizontal	70 % of maximum forward speed of the wheelchair or 5 km/h whichever is lower	70 % of maximum forward speed of the wheelchair or 5 km/h whichever is lower	70 % of maximum forward speed of the wheelchair or 5 km/h whichever is lower	4.75 km/h	P																
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8.8.9	Distance range (acc. to ISO 7176-4: 2008)		P																		
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8.8.9	Surface temperature																				
	Surfaces of the wheelchair that can come into direct contact with the occupant's skin and/or assistant's skin during normal use and that are within the envelope illustrated in Figure 2 shall not exceed 41 °C when tested as specified in EN 12182. If an ambient temperature is not specified, test at an ambient temperature of 20 °C ± 2 °C		P																		
8.10	Resistance to ignition																				
8.10.1	Upholstered composite parts	<p>Test material: seat canvas Test lab: TÜV SÜD PS GmbH Test report no.: 70076304</p> <p>Test material: Dartex Grau Test lab: swerea IVF AB Test standard: ISO 7176-16: 1997 Test report no.: 5090367-1</p> <p>Test material: Pluesch Grau Prima Test lab: IFP Research AB Test standard: ISO 7176-16: 1997 Test report no.: UP0420.0102</p> <p>Due to the similar test procedure between EN 1021-1 and 2 and ISO 7176-16 the result of the available test report was accepted. It is recommended to update the tests.</p>	P - C																		
8.10.2	Foam materials	Test material: arm support (1443004 LH / 1449043 RH) Test lab: TÜV SÜD PS GmbH Test report no.: 71316579	P																		
8.10.3	Other parts	Test material: Restraining belts Test lab: TÜV SÜD Product Service GmbH Test report no.: 70112556	P																		



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8.11	<p>Climatic test (acc. to ISO 7176-9:2001 / EN 60529:1991)</p> <table border="1"> <thead> <tr> <th colspan="4">ISO 7176-9: 2001 Climatic tests for electric wheelchairs</th> </tr> <tr> <td colspan="4">Note: Pagination according to ISO 7176-9</td> </tr> <tr> <th>Test procedure and requirements</th> <th colspan="2">Test conditions or Test method</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>7.3</td> <td>Rain condition, IPX4</td> <td>IEC 60529</td> <td>P</td> </tr> <tr> <td>7.4</td> <td>Cold operating conditions, -25°C</td> <td>----</td> <td>P</td> </tr> <tr> <td>7.5</td> <td>Hot operating conditions, +50°C</td> <td>----</td> <td>P</td> </tr> <tr> <td>7.6</td> <td>Cold storage conditions, -40°C</td> <td>----</td> <td>P</td> </tr> <tr> <td>7.7</td> <td>Hot storage conditions, +65°C</td> <td>----</td> <td>P</td> </tr> <tr> <td>8</td> <td>Functional check</td> <td>----</td> <td>P</td> </tr> </tbody> </table>		ISO 7176-9: 2001 Climatic tests for electric wheelchairs				Note: Pagination according to ISO 7176-9				Test procedure and requirements	Test conditions or Test method		Result	7.3	Rain condition, IPX4	IEC 60529	P	7.4	Cold operating conditions, -25°C	----	P	7.5	Hot operating conditions, +50°C	----	P	7.6	Cold storage conditions, -40°C	----	P	7.7	Hot storage conditions, +65°C	----	P	8	Functional check	----	P	P
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8.12	Seating adjustments for tilt and recline systems																																						
8.12.1	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.		N																																				
	Controls for seating adjustments intended to be operated by the occupant shall be accessible to the occupant from all seating positions.		P																																				
9	Electrical requirements																																						
9.1	General requirements																																						
	The wheelchair shall conform to the requirements of ISO 7176-14:2008.	Test lab: TÜV SÜD PS GmbH Test report no.: 71385344	P																																				
	The wheelchair shall conform to the requirements of ISO 7176-21:2003.	Test lab: Phoenix Testlab GmbH Test report no.: E103802E1 + E103802E2	P																																				
	In addition, wheelchairs that include an on-board battery charger shall conform to the applicable electrical requirements of EN 60601-1:2006 and EN 61000-3-2:2006 for electromagnetic compatibility.		N																																				



Clause --- Prüfpunkt	Requirement + Test --- Anforderung + Prüfung	Result - Remark --- Ergebnisse – Bemerkungen	Verdict Wertung
9.2	Requirement for controller on/off switch		
	Provision shall be made for the occupant and/or assistant to switch the wheelchair on and off.		P
	Switches intended to be operated by the occupant shall be within the reach space shown in Figure 2. Switches intended to be operated by an assistant shall be attached to the assistant control unit positioned as specified in 8.6.1.		P
	If the wheelchair is switched off while driving on the horizontal, it shall come to a stop within the maximum stopping distances specified in Table 2.		P
9.3	Requirement for power indicator		
	The wheelchair shall be fitted with a device to indicate to the occupant and/or assistant that power is switched on. The colour of this indication shall conform to EN 60601-1:2006.		P
9.4	Requirements for circuit protection		
	Circuits connected to batteries on the wheelchair shall be protected against excessive current.		P
	The driving, braking and steering functions shall not be affected by the operation of the means of protection of any other circuit.		P
	Lights, direction indicators and hazard warning flasher functions shall not be affected by the operation of the means of protection of any other circuit.		P
9.5	Requirements for battery chargers		
	Battery chargers for wheelchairs shall conform to the requirements of ISO 7176-14:1997 that apply to battery chargers:		
	Battery chargers for wheelchairs shall be in line with the requirements of IEC335-2-29, class 2 and IEC529 IPX1		P
	If the battery charger is intended for different battery voltages, the switching shall be done with a tool or it shall be locked in order to avoid unintended switching and therefore damages to the batteries.		P
	If the battery charger is intended for different battery types and is equipped with a manual switch, the switching shall be done with a tool or it shall be locked in order to avoid unintended switching and therefore damages to the batteries.		P
	The charger has to display clearly that the batteries are connected		P



Clause --- Prüfpunkt	Requirement + Test --- Anforderung + Prüfung	Result - Remark --- Ergebnisse – Bemerkungen	Verdict Wertung
	If the battery charger is connected so that the two poles are mixed up,		
	no current higher than 100 mA shall flow		N
	the device shall not be damaged (exchange resp. reversing of fuses)		N
	The battery charger shall charge the batteries of the wheelchair up to 80% of their rated capacity within 8 hours.		P
	A label has to show, which batteries can be charged up to 80 % of the rated capacity within 8 hours.		P
	The charging process shall start 0.5 s after the connection of the batteries, in order to prevent sparks during the process of plugging in.		P
	together with the following provisions:		
	a) battery chargers shall indicate when charging is in progress and when charging is complete		P
	b) battery chargers shall have the capability of charging batteries discharged to 70 % of their nominal voltage;		P
	c) battery chargers shall operate without the need for intervention or supervision apart from connecting and turning on at the start of charging and turning off and disconnecting at the end of charging;		P
	d) carry-on and on-board battery chargers shall meet the environmental protection requirements of IPX4 when tested in accordance with EN 60529:1991 and meet the Class II Test Voltage requirements of EN 60335-1:2002 concluding the test.		P
9.6	Charge level indicator		
	The wheelchair shall be equipped with a charge level indicator.		P
10	Requirements for information supplied by the manufacturer		
10.1	General		
	Each wheelchair shall be provided with documentation and labelling that conform to the requirements in EN 12182 and ISO 7176-15:1996. In addition, the manufacturer shall provide the documentation in three separate sections: pre-sale, user and service information as specified in 10.2, 10.3 and 10.4. These may be provided as separate printed documents or in other forms of media to meet the needs of individual occupants or their assistants.		
	EN 12182 The information applied to, and supplied with, aids shall conform to EN		



Clause --- Prüfpunkt	Requirement + Test --- Anforderung + Prüfung	Result - Remark --- Ergebnisse – Bemerkungen	Verdict Wertung
	1041 together with, but not limited to, the following requirements.		
	the information shall include 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		
	<ul style="list-style-type: none"> warnings and advice about precautions relating to high and /or low temperature surfaces 		P
	<ul style="list-style-type: none"> warnings and advice about precautions relating to safe distances between moving and stationary parts 		P
	<ul style="list-style-type: none"> instructions on how to fold and/or adjust aids and warnings and advice about precautions needed to avoid hazards 		P
	<ul style="list-style-type: none"> advice on safe lifting and handling 		P
	<ul style="list-style-type: none"> the level of protection of electrical equipment against the ingress of liquids and advice on the intended environments of use and related safety recommendations 		P
	<ul style="list-style-type: none"> information about dangerous combinations of devices (e.g. cushions for the prevention of decubitus ulcers often only work on the correct seat surface, spreader bars for slings for hoists are often only suitable for specific products) 		N
	<ul style="list-style-type: none"> the information applied to, and supplied with, aids intended by the manufacturer for use by people with reading difficulties shall be in a form that they can comprehend. Aids intended by the manufacturer for use by persons with visual impairment shall be in a tactile (e.g. Braille) or audio form. 		P
	the information shall include any maintenance and cleaning instructions		P
	if the strength and durability of an aid is related to the body mass of a disabled person and/or attendant, the manufacturer's information and labelling shall specify that mass as a limiting value for use		P
	if an aid is not flame resistant and/or does not comply with the flammability requirements of 5.1 the precautions necessary to ensure the safety of the user and/or attendant and, if possible, the aid shall be labelled to show that it is not flame resistant		N



Clause --- Prüfpunkt	Requirement + Test --- Anforderung + Prüfung	Result - Remark --- Ergebnisse – Bemerkungen	Verdict Wertung
	if an aid may be affected by electromagnetic emissions, the information shall include:		
	<ul style="list-style-type: none"> advice on the intended environments of use, any environments known to be hazardous, (e.g. close proximity to radio transmitters) and a description of the hazard(s) 		P
	<ul style="list-style-type: none"> guidance on how to correct any malfunctions 		P
	if an aid is intended to be cleaned, a description of the method and suitable cleaning materials, including any precautions needed to avoid corrosion		P
	If an aid is intended to be disinfected, a description of the method and suitable materials, including any precautions needed to avoid corrosion.		P
	If an aid can create a noise hazard, warnings and advice about precautions relating to high output sound levels		N
	EN 1041		
	the information shall be legible and comprehensible. If there is not enough space on the device, the information		P
	all used symbols shall either be in line with the symbols used in the harmonised standards or		P
	if harmonised standards do not exist, they shall be described in the documents supplied by the manufacturer		P
	the information supplied by the manufacturer shall not be presented in such a way that they cover up essential information resp. may be mixed up with it		P
	measurement units shall be stated in SI-units (ISO 31) or any other legal units		P
	the information essential for a safe operation of the device shall be fitted on the device itself and / or on any wrapping of each component or on the sale wrapping of each component. If an individual wrapping is not suitable, all information shall be included in the user manual		P
	the functions of control facilities, which may be adjusted by the user, shall be clearly described		P
	the manufacturer's address shall be mentioned		P



Clause --- Prüfpunkt	Requirement + Test --- Anforderung + Prüfung	Result - Remark --- Ergebnisse – Bemerkungen	Verdict Wertung
	ISO 7176-15 The following information shall be available in the official languages of countries in which the wheelchair is marked.		
	specification sheet		P
	a statement as to which features and options are included in specific models of wheelchairs		P
	a description of the intended use		P
	details of the warranty or		P
	if no warranty is provided, a statement to that effect		N
	information on how to get repairs and service		P
	information as to whether a service manual is available		P
	a user manual		P
	User manual		
	details of the warranty		P
	General characteristics as follows:		
	description of the wheelchair type, accompanied by pictures or drawings of the wheelchair and a non-technical description of how the wheelchair is intended to be used		P
	description of the intended user, including maximum occupant mass		P
	the environment in which the wheelchair is intended to be used and any environmental conditions that might be harmful to the wheelchair, such as temperature and humidity		P
	if pneumatic tyres are fitted, the recommended inflation pressure range, given in kilopascals		P
	if a wheelchair is marketed for user assembly:		
	<ul style="list-style-type: none"> a list of components 		N
	<ul style="list-style-type: none"> information about any tools or equipment needed to assemble the wheelchair 		N
	<ul style="list-style-type: none"> instructions on how to inspect for missing or damaged parts 		N
	<ul style="list-style-type: none"> instructions for assembling, installing and removing any parts supplied by the manufacturer 		N
	<ul style="list-style-type: none"> instructions how to prepare the wheelchair for storage, shipment or travel, e.g. removal of any batteries 		N



Clause --- Prüfpunkt	Requirement + Test --- Anforderung + Prüfung	Result - Remark --- Ergebnisse – Bemerkungen	Verdict Wertung
	instructions for operation of the wheelchair:		
	<ul style="list-style-type: none"> instructions for operating the wheelchair on surfaces likely to be encountered by the user 		P
	<ul style="list-style-type: none"> instructions for transfer of the user to and from the wheelchair 		P
	<ul style="list-style-type: none"> illustrations to clarify these instructions (ramps, steep to rain, kerbs and steps and transfer) 		P
	<ul style="list-style-type: none"> any common misuse of the wheelchair known by the manufacturer that might lead to personal injury or damage to the wheelchair 		P
	maintenance instructions accompanied by annotated illustrations:		
	<ul style="list-style-type: none"> any service, maintenance and/or fault-finding for which the manufacturer intends the user to be responsible 		P
	<ul style="list-style-type: none"> information about the type of tools or equipment needed to repair and service the wheelchair 		P
	<ul style="list-style-type: none"> frequency of maintenance 		P
	<ul style="list-style-type: none"> a list of materials necessary, incl. part number and procurement information 		P
	<ul style="list-style-type: none"> identification of circumstances in which an operation should be undertaken by the manufacturer, distributor or service agent 		P
	instructions on methods of cleaning		P
	for parts that the manufacturer intends to be readily replaced:		
	<ul style="list-style-type: none"> ordering information 		P
	<ul style="list-style-type: none"> instructions for access removal 		P
	<ul style="list-style-type: none"> replacement and testing 		P
	<ul style="list-style-type: none"> annotated illustrations of the parts and their location (incl. tyres and batteries) 		P
	instructions for carrying out performance checks		P
	description of wheelchair the repairs to be performed:		
	identification of parts that are intended to be repaired by the user		P
	identification of parts that have to be serviced by manufacturer or an authorised service facility in order to maintain warranties and serviceability		P
	identification of any parts that can be removed		P



Clause --- Prüfpunkt	Requirement + Test --- Anforderung + Prüfung	Result - Remark --- Ergebnisse – Bemerkungen	Verdict Wertung
	and sent to the manufacturer / distributor or other party for repair		
	identification of circumstances in which the manufacturer, distributor or service agent should undertake the repair		P
	a list of authorised service facilities		P
	Information on whether or not any replacement units are available		P
	packing and shipping instructions when necessary		P
10.2	Pre-sale information		
	a) information on how to obtain the user information in a format appropriate for use by visually impaired people;		P
	b) a 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)		P
	c) a description of the intended use and the intended environment		P
	d) the type class of the wheelchair: Class A, Class B or Class C;		P
	e) the 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;		P
	f) the reversing width, expressed in millimetres		P
	g) the maximum safe slope, expressed in degrees;		P
	h) the maximum height of kerb which the wheelchair can descend safely, expressed in millimetres;		P
	i) 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;		P
	j) standard options that are available for the wheelchair;		P
	k) the type of tyres that can be used on the wheelchair;		P
	l) if a programmable controller is fitted,		P



Clause --- Prüfpunkt	Requirement + Test --- Anforderung + Prüfung	Result - Remark --- Ergebnisse – Bemerkungen	Verdict Wertung
	information on the method of programming, who should carry out the programming and the effects it can have on driving performance;		
	m) operator control adjustments;		N
	n) the theoretical continuous driving distance range, expressed in kilometres, that the wheelchair can travel under its own power on the horizontal when tested in accordance with ISO 7176-4:2008, with the addition of a note explaining that the distance will be reduced if the wheelchair is used frequently on slopes, rough ground or to climb kerbs etc.;		P
	o) whether and how the wheelchair can be folded or dismantled to assist in storage or transport;		P
	p) if the wheelchair can be dismantled or has any removable parts, the mass of the heaviest part, expressed in kilograms;		P
	q) instructions regarding transport of the wheelchair when it is unoccupied (e.g. in a car or aeroplane);		P
	r) information on whether or not the wheelchair is intended to be used as a seat in a motor vehicle;		P
	s) 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.		P
10.3	User information		
	a) the unique identification number of the wheelchair and information on the location of the unique identification number on the wheelchair;		P
	b) the intended operator (occupant, assistant or both);		P
	c) any adjustment or settings required before the wheelchair can be used and warnings of how adjustments or settings affect stability;		P
	d) where applicable, information on any adjustments that can be made and who is competent to carry out these adjustments;		P
	e) instructions on operation of all controls, including brakes;		P
	f) instructions on how to engage and disengage the drive system;		P



Clause --- Prüfpunkt	Requirement + Test --- Anforderung + Prüfung	Result - Remark --- Ergebnisse – Bemerkungen	Verdict Wertung
	g) the wheelchair manufacturer's recommended tyre pressure(s), expressed in kilopascals (kPa) or bar;		P
	h) instructions for dealing with tyre punctures, where pneumatic tyres are fitted;		P
	i) the battery type and nominal voltage;		P
	j) instructions for battery maintenance		P
	k) instructions for operating the battery charger, including warnings regarding any potential safety hazards (e.g. a possibility of gas accumulating in the charging area);		P
	l) instructions on dismantling and re-assembly of the wheelchair or any removable parts;		P
	m) the masses of parts of the wheelchair that are expected to be handled during dismantling, reassembly, or carrying, expressed in kilograms;		P
	n) 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;		P
	o) a warning that surface temperatures can increase when exposed to external sources of heat (e.g. sunlight);		P
	p) a warning that the wheelchair might disturb the operation of devices in its environment that emit electromagnetic fields (e.g. alarm systems of shops, automatic doors etc.);		P
	q) a warning that the driving performance of the wheelchair can be influenced by electromagnetic fields (e.g. those emitted by portable telephones, electricity generators or high power sources);		P
	r) a warning if driving characteristics can be adjusted outside the limits specified in Table 1 and Table 2;		P
	s) a warning for trapping hazards (e.g. pinch points);		P
	t) the level of resistance to ignition of materials and assemblies;		P
	u) information on the recycling of used batteries and other parts of the wheelchair;		P
	v) a warning if the adjustments of seating or wheel positions can be set outside safe limits;		P
	w) the expected service life of the wheelchair.		P
	Additional requirements:		



Clause --- Prüfpunkt	Requirement + Test --- Anforderung + Prüfung	Result - Remark --- Ergebnisse – Bemerkungen	Verdict Wertung
	CE-mark		P
	Recycling		P
10.4	Service information		
	The service information shall contain all the pre-sale information, user information and instructions necessary for the maintenance, adjustment and repair of the wheelchair and for the replacement of parts.		P
10.5	Labels		
	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;		P
	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);		P
	c) the year of production for the product;		P
	d) for battery chargers that are not on-board chargers, information and connection details specified in Clause 9 of ISO 7176-14:1997;		P
	e) 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;		N
	f) for Class A wheelchairs for use indoors only a warning that it should only be used indoors.		N
	Type plate		
	permitted total weight (unladen weight, load)		P
	maximum user weight		P
	permitted load on the axle front / rear		P
	maximum speed		P
	max. hill-climbing ability		P
	type designation		P
	serial number		P
	year of manufacture		P
	name and address of the manufacturer / importer		P
	Labels on the outside of devices or components acc. to DIN EN 60601-1		



Clause --- Prüfpunkt	Requirement + Test --- Anforderung + Prüfung	Result - Remark --- Ergebnisse – Bemerkungen	Verdict Wertung
	For testing their durability, labels are manually rubbed without a certain pressure:		
	15s with a fabric soaked in distilled water		P
	15s with a fabric soaked in spirit		P
	15 s with a fabric soaked in Isopropyl alcohol		P
11	<p>Lighting (Annex B.3.3)</p> <p>The wheelchair may be subject to national requirements for lights and reflectors. If there are no national requirements, the manufacturer should make an effort to conform to applicable automotive Directives of the European Union (76/756/EEC, 97/28/EEC).</p> <p>The manufacturer should also consider the applicable requirements of Directive 2006/42/EC of the European Parliament and of the Council of 17 May 2006 on machinery.</p>		
11.1	<p>Lights and reflectors</p> <p>Motorised wheelchairs are motor vehicles according to the traffic law (§1, chapter 2). Wheelchairs which shall be operated on public roads have to fulfil the requirements of the German Traffic Law (StVZO, FZV) as well as of the Road Traffic Regulations (StVO).</p>		
	Devices for lights (LTE) and their light sources (e.g. exchangeable light bulbs) must be type approved parts of a vehicle according to § 22a StVZO.		P
	Only laid down and permitted LTE may be used.		P
	For headlights without any type approval fixed at vehicles which are produced in foreign countries an expert report from a technical testhouse for lighting equipment is required.		N
	A light is considered to be non-existent, if it can not be put into operation by simply inserting of a light source (ECE 48 clause 5.22).		P
	A light is considered to be non-existent, if it can not be put into operation by simply inserting of a light source (ECE 48 clause 5.22).		P
11.2	<p>Number of lights and reflectors</p>		
	<p>Headlights</p> <ul style="list-style-type: none"> • headlights must be adjustable • lowest point of the mirror edge \geq 500 mm above the floor <p>max. speed \leq 8 km/h:</p> <ul style="list-style-type: none"> • one white light without head light function (type approved) <p>max. speed \geq 8 km/h:</p> <ul style="list-style-type: none"> • one white light with headlight function (type approved); max. 2 headlights are 		P



Clause --- Prüfpunkt	Requirement + Test --- Anforderung + Prüfung	Result - Remark --- Ergebnisse – Bemerkungen	Verdict Wertung
	<p>allowed</p> <ul style="list-style-type: none"> the minimum requirement for the headlight is the TA 23 (requirement for bicycle) 		
	Taillights		
	<ul style="list-style-type: none"> 2 red taillights mounting height: ≥ 350 mm separate fuses have to be available they shall be fixed as far as possible away from each other at the outermost edge and have to be fixed at non moveable parts two further red taillights are permissible 		P
	Reflectors		
	<ul style="list-style-type: none"> 2 red reflectors not triangular mounting height: ≤ 900 mm they shall be fixed as far as possible away from each other and have to be fixed at non moveable parts 		P
	Indicators		
	<ul style="list-style-type: none"> fault indication, optical or acoustical signal lowest point of the mirror edge ≥ 400 mm above the floor 		P
	Hazard lights		
	Hazard lights are not required but if hazard lights available then the lights have to fulfil the requirements.		P
	Reflectors, which are to be mounted at the sides		
	<ul style="list-style-type: none"> 2 yellow reflectors (1 at each side) mounting height: ≤ 600 mm reflectors should be assembled vertically, across or along the longitudinal direction of the wheelchair 		P

