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检测
TESTING
CNAS L2073

Test Report

№ 281/2024

Client	Guangzhou Topmedi Co., Ltd.
Product Name	Manual Wheelchair
Model/Type	TAW951L (TAW Series)
Type of Test	Entrusted Test

Rehabilitation Technical Aids Quality Supervision & Test Center

National Research Center for Rehabilitation Technical Aids

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Rehabilitation Technical Aids Quality Supervision & Test Center
National Research Center for Rehabilitation Technical Aids
Test Report

№ 281/2024

Product Name	Manual Wheelchair Send sample（√） Sampling（ ）	Sample No.	126/2024-1A
Trade Mark	/	Model/Type	TAW951L
Client	Guangzhou Topmedi Co., Ltd.	Type of Test	Entrusted Test
Client Address	RM 1505-1507, Golden Sky Tower, No.83 Middle Huadi Road, Liwan District, Guangzhou, Guangdong, 510380, P.R. China	Production No. and Batch No.	SN24060001
Manufacturer	Guangzhou Topmedi Co., Ltd.	Sampling Bill No.	/
Inspected Entity	Guangzhou Topmedi Co., Ltd.	Date Of Production	7-Jun-2024
Sampling Unit	/	Sample Quantity	1
Sampling Location	/	Sampling Base	/
Sampling Date	/	Test Site	The test center lab
Receival Date	24-Jul-2024	Test Date	11-Jul-2024~ 29-Sep-2024
Load Level	125kg		
Test Items	Except biocompatibility and toxicity, wheelchair for motor vehicle seats		
Test Criteria	EN 12183:2022		
Test Conclusion	The inspected items of the samples are qualified with the requirements of EN 12183:2022. （Inspection unit official seal） Issue date:31-Dec-2024		
Note	1） Test object does meet the requirement — Pass 2） Test object does not meet the requirement — Fail 3） Test case does not apply to the test object— N.A. 4） Blank — /		

Approved by: Gu Huiru Examined by: Yan Wei Tested by: Zhang Weikang
Li Jia Hao

No.	Test Item	Standard Clause	Performance Indicator	Test Result	Notes
6	Squeezing	5.10.1	Unless the intended purpose of part of the wheelchair is to grip, cut, squeeze or provide a similar function, or if the intended use cannot be achieved without a risk of squeezing: a) any moving parts that constitute a hazard shall be provided with guards that cannot be removed without the use of a tool; or	Pass	/
			b) the gap between exposed parts of the wheelchair that move relative to each other shall be maintained throughout the range of movement at less than the relevant minimum value or more than the relevant maximum value specified in Table 1; or	N.A.	/
			c) if cords (ropes), chains or drive belts are used, either they shall be confined so that they cannot run off or jump out of their guiding devices, or a hazardous situation shall be prevented by other means; mechanical means used for this purpose shall not be removable without the use of a tool; or	N.A.	/
			d) the wheelchair shall incorporate a control device which enables the movement when it is operated and stops the movement when it is released (e.g. a spring-loaded device that returns to the stop position when released).	N.A.	/
			For moving parts that can cause squeezing, manufacturers shall take into consideration the part or parts of the body that are at risk. It is necessary to specify the characteristics of the persons involved in the intended use, so that the appropriate safe distances can be applied.	Pass	/
	Mechanical wear	5.10.2	Parts subject to mechanical wear likely to create a hazard shall be accessible for inspection.	Pass	/

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No.	Test Item	Standard Clause	Performance Indicator	Test Result	Notes
7	Holes and clearances	5.11.1	Holes in, and clearances between stationary parts that are accessible to the occupant and/or assistant during the intended use of the wheelchair shall be as specified in Table 2.	N.A.	/
			If the intended purpose of the wheelchair cannot be met without a hazard caused by the size of holes and the clearance between stationary parts, a warning and instructions on how to control the risk shall be provided in the instructions for use.	Pass	/
			For stationary parts that can cause a trap, manufacturers shall take into consideration the parts of the body that are at risk. It is necessary to specify the characteristics of the persons involved in the intended use, so that the appropriate safe distances can be applied.	Pass	/
			The design of parts that confine a hole or clearance shall take into consideration the forces that can be applied in normal use.	Pass	/
			The lower limits specified in Table 2 do not apply for holes with the shape of a keyhole, or for V-shaped openings. When inspecting the wheelchair for traps for body parts any flexibility and/or elasticity of adjacent parts shall be taken into account.	N.A.	/
8	Folding and adjusting mechanism General	5.12.1	Folding and adjusting mechanisms can present a hazard if parts of the body can enter a gap between parts and be trapped when the gap is closed. If the wheelchair incorporates folding and/or adjusting mechanisms it shall conform to 5.12.2 and 5.12.3.	Pass	/
	Locking mechanisms	5.12.2	Folding and adjusting mechanisms shall be capable of being securely locked when the wheelchair is in a working configuration. They shall also be capable of being securely locked when folded if they constitute a risk. The wheelchair shall fold in a safe manner.	Pass	/

No.	Test Item	Standard Clause	Performance Indicator	Test Result	Notes
11	Applicable provisions for specified types of wheelchair	5.15	Annex F specifies the provisions in this document that apply to some specified types of wheelchair. Wheelchairs of types listed in F.1 shall meet the applicable requirements of Annex F.	N.A.	/
12	Static stability	7.1	If the static stability of the wheelchair in the rearward direction is less than 10°, the wheelchair shall have provision for anti-tip devices that increase the static stability in the rearward direction to at least 10°	See table 1	/
13	Static, impact and fatigue strength	7.2	The wheelchair shall conform to the requirements of ISO 7176-8:2014. Arm supports shall conform to the static loading requirements of ISO 7176-8:2014 in the least favourable intended operating position.	See table 2	/
14	Tipping fatigue strength	7.3	After the wheelchair has been subjected to the test specified in 7.3.3, no part of the back support shall have moved from the pre-set position and no component or assembly of parts shall show visible signs of cracks, breakages, gross deformations, free play, loss of adjustment or any other damage that adversely affects the function of the wheelchair.	Pass	/
15	Surface temperature	7.5	If the intended use includes use by people with insensitive and/or damaged skin, the maximum temperatures of the surfaces involved shall not exceed 41 °C when measured in accordance with EN ISO 13732-1:2008.	30℃	/

No.	Test Item	Standard Clause	Performance Indicator	Test Result	Notes
16	Foot supports, lower leg support assemblies and arm supports	8.1	The wheelchair shall be fitted with foot supports that have a means of positioning the occupant's feet at the required height and prevent the occupant's feet from sliding backwards.	Pass	/
			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;	Pass	/
			b) be adjustable in increments not exceeding 25 mm in any direction;	N.A.	/
			c) be accessible and operable by the occupant or an assistant or both in accordance with the manufacturer's intended use of the wheelchair;	Pass	/
			d) be within the reach space shown in Figure 1; and	Pass	/
			e) be operable without the use of a tool.	Pass	/
			Where the wheelchair has separate foot supports which have a gap between them or the possibility of a gap being formed when they are loaded: f) means to prevent the occupant's feet from sliding into the gap shall be provided; or	Pass	/
			g) when the foot supports are tested in accordance with 8.1.2.2, any gap between them shall be less than: —25 mm if the wheelchair is intended for use by a child; —35 mm if the wheelchair is not intended for use by a child.	N.A.	/
17	Component mass	8.2	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.	Pass	/

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No.	Test Item	Standard Clause	Performance Indicator	Test Result	Notes
18	Pneumatic tyres	8.3	All pneumatic tyres on the wheelchair shall have the same type of valve connection. Valves should be readily accessible when using the intended inflating tool. The tyres or the rims shall be marked with the maximum pressure in kPa, bar or PSI.	60PSI	/
19	Means for maintaining a sitting posture	8.4	The wheelchair shall have provision for a means to be fitted that enables the occupant to maintain a sitting posture.	Pass	/
20	Resistance to ignition	8.5	The surfaces of components which support the occupant, or which stay in contact with the occupant or the occupant's clothing, shall be tested as specified in 8.5.2. Progressive smouldering ignition or flaming ignition as defined in the standard applied shall not occur.	Pass	/
21	Means for operating brakes	9.1	a) Means for operating brakes shall: 1) be accessible and operable by the occupant or an assistant or both in accordance with the manufacturer's intended use of the wheelchair;	Pass	/
			2) be within the reach space shown in Figure 1, if the wheelchair is intended to be operated by the occupant;	Pass	/
			3) be within the reach space shown in Figure 2, if the wheelchair is intended to be operated solely by an assistant;	Pass	/
			4) have operating forces for engaging and disengaging that do not exceed those stated in Table 3when tested in accordance with 9.1.2	engaging 60N disengaging 60N	/
			b) If one or more brake levers are fitted to a wheelchair in the form used on bicycles and mopeds: 1) for wheelchairs with a maximum occupant mass not greater than 150 kg, the force applied to each lever to hold the loaded wheelchair stationary on the maximum slope specified by the manufacturer for parking brake use shall not exceed 60 N;	Pass	/

No.	Test Item	Standard Clause	Performance Indicator	Test Result	Notes
21	Means for operating brakes	9.1	2) for wheelchairs with a maximum occupant mass greater than 150 kg, the force applied to each lever to hold the loaded wheelchair stationary on the maximum slope specified by the manufacturer for parking brake use should not exceed 60 N;	N.A.	/
			3) the grip width of such brake levers when no force is applied, measured 15 mm from the end of the brake lever, shall not be greater than 100 mm and should not be greater than 80 mm (see Figure 3).	95mm	/
22	Braking functions	9.2	a) The wheelchair shall have parking brakes that meet the parking brake effectiveness requirement in Table 3 when tested in accordance with 9.2.2.1.	Pass	/
			b) If they are subject to wear, parking brakes shall have provision for adjustment and/or replacement as specified by the manufacturer.	Pass	/
			c) If the wheelchair is fitted with arm supports that can be moved or removed to enable transfer of the occupant into or out of the wheelchair, when tested in accordance with 9.2.2.2, engaged parking brakes shall not have parts that protrude above the level of the occupied seat that can make contact with the occupant during transfer.	Pass	/
			d) When parking brakes are tested in accordance with 9.2.2.3, no parking brake mechanism shall move from the pre-set position and no component or assembly of parts shall show visible signs of cracks, breakages, gross deformations, free play, loss of adjustment or any other damage that adversely affects the function of the wheelchair.	Pass	/
			e) After testing of the parking brakes in accordance with 9.2.2.3, parking brakes shall meet the parking brake effectiveness requirement in Table 3 when tested again in accordance with 9.2.2.1.	52N	/

No.	Test Item	Standard Clause	Performance Indicator	Test Result	Notes
23	Pushing force	9.3	When determined in accordance with 9.3.2, the pushing force required to start the loaded wheelchair moving and to maintain a constant speed on a horizontal surface shall not exceed the following limits: —40 N for m ≤ 100 kg; —60 N for 100 kg < m ≤ 150 kg; —70 N for 150 kg < m ≤ 200 kg; —80 N for 200 kg < m ≤ 250 kg; where m is the maximum occupant mass specified by the wheelchair manufacturer.	35N	/
24	Operations intended to be carried out by the occupant and/or assistant	10.1	Wheelchairs shall be designed to facilitate ease of operation by the occupant and/or assistant as specified in the manufacturer's instructions.	Pass	/
25	Controls intended for operation by the occupant	10.2	Controls intended to be operated by the occupant while seated shall be within the occupant reach space shown in Figure 1.	Pass	/
26	Controls intended for operation by an assistant	10.3	Controls intended to be operated by an assistant shall be within the region specified in Figure 2.	Pass	/
27	Push handles and handgrips	10.4	When push handles are fitted, no part of the wheelchair shall lie within a space to the rear of the wheelchair bounded.	Pass	/
			When the wheelchair is fitted with push handles, the handgrips shall be at least 75 mm in length and between 20 mm and 50 mm in diameter.	75mm 20mm	/
			When push handles are fitted with controls that are intended to be used by being gripped by one hand, the grip width when no force is applied shall not be greater than 100 mm and should not be greater than 80 mm (see Figure 3).	N.A.	/

No.	Test Item	Standard Clause	Performance Indicator	Test Result	Notes
28	Operating forces	10.5	All controls, except for means to operate brakes, shall have operating forces for engaging and releasing that do not exceed those stated in Table 3 when tested in accordance with 10.5.2.	N.A.	/
			In addition, to achieve the intended function of the system or device being operated, for knobs intended to be gripped and turned by one hand: —where the diameter of the knob is greater than or equal to 25 mm and the force is transmitted by friction, the numerical value of the torque, expressed in Nm, shall not be greater than 0,05 times the numerical value of the diameter of the knob, expressed in mm; and —where the diameter of the knob is less than 25 mm diameter, the numerical value of the torque, expressed in Nm, shall not be greater than 0,025 times the numerical value of the diameter of the knob, expressed in mm.	N.A.	/
29	Seating adjustments for tilting and reclining	10.6	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 apply or withstand a force (e.g. the combined weight of the occupant and the seating) which presents a moving and handling safety hazard to the assistant and/or the occupant; and —movement of the seating, whether continuous or incremental, shall automatically be prevented when the assistant or occupant releases the means of operation.	N.A.	/
			Controls for seating adjustments intended to be operated by the occupant shall be accessible to the occupant from all seating positions.	N.A.	/

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No.	Test Item	Standard Clause	Performance Indicator	Test Result	Notes
30	Electrical systems — Electrically powered ancillary equipment	11	If the wheelchair has electrically powered ancillary equipment that can propel the wheelchair or move parts of the body support system, the wheelchair combined with the ancillary equipment shall conform to the applicable requirements of EN 12184:2022.	N.A.	/
31	Information supplied by the manufacture r General	12.1	Each wheelchair shall be provided with documentation and labelling that conform to the applicable requirements in EN ISO 20417:2021 in addition to the requirements specified in this document. The manufacturer shall provide the documentation in three separate sections: pre-sale, user and servicing information, as specified in 12.2, 12.3 and 12.4 respectively. These may be provided as separate printed documents or in other forms of media to meet the needs of individual occupants or their assistants.	Pass	/

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No.	Test Item	Standard Clause	Performance Indicator	Test Result	Notes
32	Pre-sale information	12.2	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) a description of the intended occupant of the wheelchair, including the occupant's mass; c) the intended operator (occupant, assistant or both), intended use and intended environment; d) the overall dimensions (width, length and height) of the wheelchair and its mass when it is ready for use and, if applicable, when it is folded and/or dismantled for storage or transportation; e) the pivot width; f) the maximum slope for use of parking brakes, expressed in degrees; g) the standard options that are available for the wheelchair; h) the type(s) of tyres (e.g. pneumatic, solid) that can be used on the wheelchair; i) if the wheelchair can be dismantled or has any removable parts, the mass of the heaviest part; j) a statement that the wheelchair is intended to be used as a seat in a motor vehicle, or a warning that the wheelchair is not intended to be used as a seat in a motor vehicle.	Pass	/
33	User information	12.3	User information shall be provided by the manufacturer with each wheelchair. Further copies shall also be available for any subsequent user of the wheelchair. User information shall contain the following where applicable: a) the unique identification number of the wheelchair or information on the location of the unique identification number on the wheelchair; b) any adjustment or settings required before the wheelchair can be used and warnings of how adjustments or settings affect stability; c) where applicable, information on any adjustments that can be made, and the competency required to carry out these adjustments;	Pass	/

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No.	Test Item	Standard Clause	Performance Indicator	Test Result	Notes
33	User information	12.3	d) instructions on operation of all controls, including brakes; e) the wheelchair manufacturer's recommended tyre pressure(s), expressed in kPa, bar or PSI; f) instructions for dealing with tyre punctures; g) instructions on whether and how the wheelchair can be folded to assist in storage or transport; h) instructions on dismantling and re-assembly of the wheelchair or any removable parts; i) instructions regarding transport of the wheelchair when it is unoccupied (e.g. in a car or aeroplane); j) 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; k) if the manufacturer specifies that the wheelchair is not intended for use in the motor vehicle, a warning to that effect; l) instructions on how to use the means for maintaining a sitting posture (see 8.4) and the circumstances in which it should be used; m) instructions on how to obtain and fit the means for maintaining a sitting posture (see 8.4) if it is not supplied with the wheelchair; n) the positions of points intended to carry additional loads; o) information on the recycling of the wheelchair; p) if the characteristics of the wheelchair (including the occupant as applicable) exceed the limits specified in Appendix M of Commission Regulation (EU) No 1300/2014 [16], a statement to that effect (see Annex C for additional information); q) information on how to find out about product safety notices and product recalls, for example by ensuring the supplier has up-to-date contact details; r) the expected service life of the wheelchair; s) information on how to get repairs and servicing; t) warranty information.	Pass	/

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No.	Test Item	Standard Clause	Performance Indicator	Test Result	Notes
34	Service information	12.4	The service information shall contain instructions necessary for the maintenance, adjustment and repair of the wheelchair and for the replacement of parts.	Pass	/
35	Labelling	12.5	The manufacturer shall apply permanent labelling for the following: a) the maximum load of the wheelchair, i.e. the total of the maximum occupant mass and the maximum mass of any other items intended to be carried by 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) for wheelchairs not intended to be used as a seat in a motor vehicle, a warning to that effect.	Pass	/

Table 1

ISO 7176-1:2014

Wheelchair tipping angle (degrees)

Stability direction		Least stable	Most stable
Forward	Front wheels locked	N.A.	N.A.
	Front wheels unlocked	19.4°	N.A.
Rearward	Rear wheels locked	14.8°	N.A.
	Rear wheels unlocked	19.6°	N.A.
Lateral orientation[1]	left	19.6°	N.A.
	right	19.6°	N.A.

Anti-tip device tipping angle

Stability direction		Least effective	Most effective	Does device prevent tipping over
Anti-tip device[2]	Rearward	21.2°	N.A.	Yes
	Forward	N.A.	N.A.	N.A.

[1] with lockable wheels locked

[2] with the wheelchair in least stable configuration (see 11.2.2 and 11.2.3)

Note specify whether any active-stability system was operational during any test and annotate the above table accordingly

Table 2

ISO 7176-8:2014

Test Item	Standard Clause	Performance Indicators		Test Results	Notes
Static strength	8	Arm supports: Resistance to downward forces	$F_1=\frac{M_d \times S \times g}{2\times\cos 15°}$	952N Pass	/
		Foot supports: Resistance to downward forces	$F_2=M_d \times g$	1226N Pass	/
		Tipping levers	$F_3=1.33\times(M_W+M_d)\times g$	1000N Pass	/
		Handgrips	$F_4=0.52\times(M_W+M_d)\times g\times S$	750N Pass	/
		Arm supports: Resistance to upward forces	$F_5=\frac{(M_d+M_w)\times S\times g}{2\times\cos 10°}$	866N Pass	/
		Foot supports: Resistance to upward forces	For wheelchairs with two separate foot supports $F_6=\frac{(M_d+M_w)\times S\times g}{4}$; For one-piece foot support $F_6=\frac{(M_d+M_w)\times S\times g}{2}$	427N Pass	/
		Push handles: Resistance to upward load	For manual wheelchairs with two push handles $F_7=\frac{(M_d+M_w)\times S\times g}{3}$; For manual wheelchairs withtransverse bar handles $F_8=\frac{2\times(M_d+M_w)\times S\times g}{3}$	1037N Pass	/

Test Item	Standard Clause	Performance Indicators		Test Results	Notes
Static strength	8	Scooter steering handles: Resistance to forward forces	450±14N	N.A.	/
		Scooter steering handles: Resistance to rearward forces	450±14N	N.A.	/
		Scooter steering handles: Resistance to downward forces	$F_1=\frac{M_d \times S \times g}{2 \times \cos 15°}$	N.A.	/
		Scooter steering handles: Resistance to upward forces	$F_7=\frac{(M_d+M_w) \times S \times g}{3}$	N.A.	/
Impact strength	9	Back support	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° ± 2° to the vertical and then it falls freely and strikes the back support	Pass	/
		Handrim	Raise the pendulum so that its longitudinal axis is at 45° ± 2° to the vertical and then release it so that it strikes the handrim	Pass	/

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Test Item	Standard Clause	Performance Indicators		Test Results	Notes
Impact strength	9	Castors	The castor is set up so that it is to be tested aligned at 45° ± 5° to the longitudinal axis of thewheelchair.The angle of swing is calculated from following equation:Cos θ=1 –(M_d+ M_w)/377, Raise the pendulum so that its longitudinal axis is at$\theta_{0°}^{+3°}$ to the vertical and then release it so that it strikes the castor wheel.	θ =51° Pass	/
		Foot supports	Lateral impact:Raise the pendulum so that its longitudinal axis is at$\theta_{0°}^{+3°}$ to the vertical and then release it so that it strikes the foot supports.	θ =51° Pass	/
			Longitudinal impact: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.	θ =51° Pass	/

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Test Item	Standard Clause	Performance Indicators			Test Results	Notes
Impact strength	9	Anti-tip devices	Upward impacts on anti-tip devices	Drive wheelchair off the curb .The height of the curb is h_1+15mm	Pass	/
			Forward or rearward impacts on anti-tip devices	The angle of swing is calculated from following equation: Cos θ=1 –(M_d+ M_w)/377 Raise the pendulum so that its longitudinal axis is at$\theta_{0^\circ}^{+3^\circ}$ to the vertical and then release it so that it strikes the anti-tip devices	Pass	/
			Lateral impacts on anti-tip devices: Anti-tip devices at front of the wheelchair	The anti-tip devices to be tested aligned at 45° ± 5° to the impact pendulum, The angle of swing is calculated from following equation: Cos θ=1 –(M_d+ M_w)/377 Raise the pendulum so that its longitudinal axis is at$\theta_{0^\circ}^{+3^\circ}$ to the vertical and then release it so that it strikes the anti-tip devices	N.A.	/

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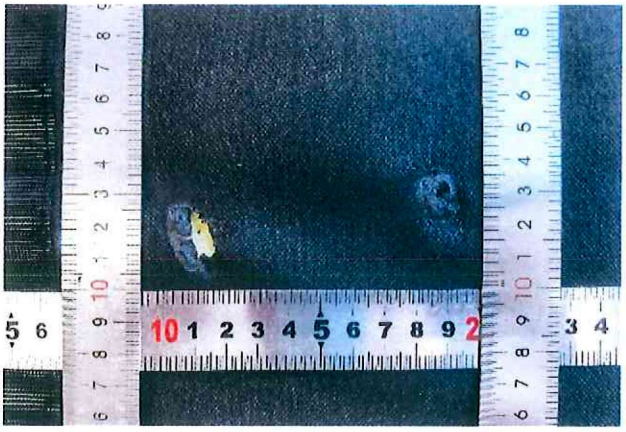
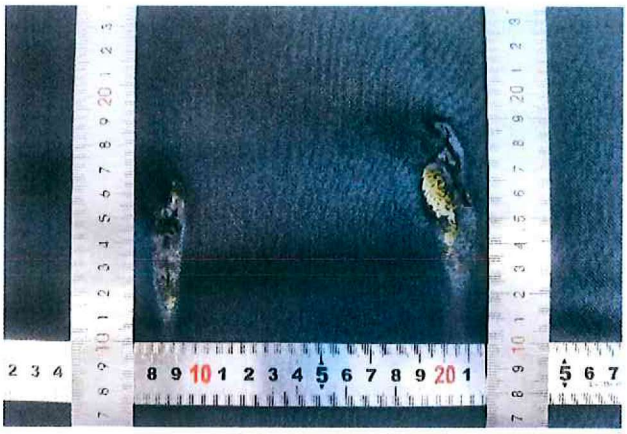


Horizontal test



Vertical test