







TEST REPORT – Static Stability
Internal Test Report attachment to STR085




Report Reference Number.....:	TR697
Date of Report.....:	19/07/2023
Tested By.....:	Callum Azzouz
Tested At.....:	Prism Medical UK
Testing Address.....:	Research & Development Testing Bay, Prism Medical UK, Unit 1, Tir Llwyd Industrial Estate, St Asaph Avenue, Kinmel Bay, Conwy, LL18 5JZ
Testing Date.....:	19/07/2023 - 19/07/2023
Average Room Temperature.....:	18°C
Average Humidity Temperature.....:	39%
Product Model.....:	Smirthwaite Asiento
Product Type.....:	Postural Seating
Part Number.....:	025562
Serial Number(s).....:	SN – AS – P1
Manufacturing Address.....:	16 Wentworth Road, Heathfield, Newton Abbot, Devon, TQ12 6TL
Test.....:	Static Stability
Standard.....:	BS EN 21856:2022 EN 60601-1:2006
Clause.....:	(21) – 9.4.1, 9.4.2, 9.4.2.1, 9.4.2.3.a, 9.4.2.3.b
Copyright Blank Test Report.....:	This test report is based on the Content of BS EN 21856:2022. This test report was prepared by Prism Medical UK. Prism Medical UK takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.
Number of Pages.....:	12
Compliant / Non-Compliant.....:	PASS
Complied By.....:	Callum Azzouz
Signature.....:	
Approved By.....:	Stuart Phelan
Signature.....:	




Test Specifics	
Specific Test Specimens.....:	Smirthwaite Asiento Size 3 – 025562
Models Covered by this Test Report.....:	Smirthwaite Asiento Size 3 - 025562
Test Item Particulars.....:	<p>All tests were completed on a Smirthwaite Asiento Size 3, but the test report covers all models stated in the section above. This is due to the differences having no effect on this specific test conducted.</p> <p>Products using the same design frame but with a lower Safe Working Load have been deemed to comply with this Test Report.</p>



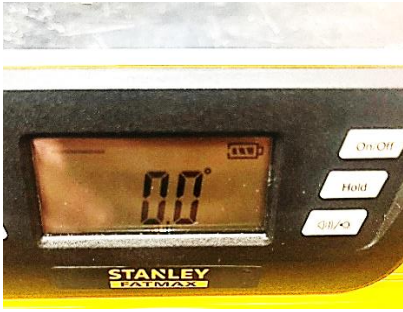

Test Requirements		
The product is required to comply with all of the requirements from the clauses below.		
Clause.....:	9.4.1	<p>Instability Hazards</p> <p><i>General</i> ME EQUIPMENT and its parts, other than FIXED ME EQUIPMENT, intended to be placed on a surface such as a floor or a table in NORMAL USE shall not overbalance (tip over) or move unexpectedly.</p> <p>NOTE: HAND HELD parts of FIXED ME EQUIPMENT are intended to be tested.</p>
	9.4.2.1	<p>Instability – Overbalance</p> <p><i>Instability in transport position</i> ME EQUIPMENT or its parts shall not overbalance when placed in any transport position of NORMAL USE on a plane inclined at an angle of 10° from the horizontal plane.</p> <p>NOTE: The meaning of transport in this sub-clause is moving ME EQUIPMENT from room to room during normal use. Compliance is checked by the following test:</p> <p>Prior to the test the ME EQUIPMENT is prepared as indicated in the ACCOMPANYING DOCUMENTS (or, is not specified, as in 9.4.2.2). The ME EQUIPMENT or its parts is placed on a plane inclined at an angle 10° from the horizontal plane. If the ME EQUIPMENT or its parts overbalances, it constitutes a failure.</p>





	9.4.2.3.a	<p>Instability from the horizontal and vertical forces</p> <p>ME EQUIPMENT or its parts having a mass of 25kg or more other than FIXED ME EQUIPMENT that is intended to be used on the floor shall be permanently marked with a CLEARLY LEGIBLE warning of this RISK, e.g. by use of safety sign ISO 7010-P017 (see Table D.2, safety sign 5), or it shall not overbalance due to being pushed, leaned, rested upon etc.</p> <p>If marking is provided because the ME EQUIPMENT overbalances, the marking shall be visible during NORMAL USE, but not on surfaces which pushing is associated with NORMAL USE (e.g. surfaces with handles).</p> <p>Compliance is checked by inspection of the marking provided or the following test:</p> <p>Prior to the test, the ME EQUIPMENT is prepared as described in 9.4.2.2. The ME EQUIPMENT is placed on a horizontal plane and a force equal to 15% of its weight, but not more than 150N, is applied in any direction, except a direction having an upward component. Unless otherwise marked the force is applied at any point of the ME EQUIPMENT but not exceeding 1.5m from the floor. The ME EQUIPMENT is prevented from sliding on the floor by a horizontal obstruction, not exceeding 20mm height, which is fastened flat on the floor. If the application of the test force results in lateral movement of the ME EQUIPMENT, increase the height of the obstruction to the minimum extent necessary to prevent lateral movement. ME EQUIPMENT without marking shall not overbalance.</p>
	9.4.2.3.b	<p>Instability from the horizontal and vertical forces</p> <p>ME EQUIPMENT or its parts, other than FIXED ME EQUIPMENT, that is intended to be used on the floor or on a table shall be permanently marked with a CLEARLY LEGIBLE warning of this RISK, e.g., by use of safety signs ISO 7010-P019 as appropriate (See Table D.2, safety signs 6 and 7), or it shall not overbalance due to being sat or stepped upon.</p> <p>NOTE: Requirements for PATIENT support surfaces are found in 9.8.3.</p> <p>If marking is provided because the ME EQUIPMENT overbalances, the marking shall be visible during potential stepping or sitting misuse.</p> <p>Compliance is checked by inspection of the marking provided or the following test:</p> <p>Prior to the test the ME EQUIPMENT is prepared as described in 9.4.2.2. The ME EQUIPMENT is placed on a horizontal plane and a constant downward force of 800N is applied at the point of maximum moment to any working surface, excluding PATIENT support surfaces, offering an obvious foothold or sitting surface of a minimum 20 cm by 20 cm area, and at a height not exceeding 1m from the floor. ME EQUIPMENT without marking shall not overbalance.</p>
Clauses not included in this test report.....:	N/A	N/A





Test Equipment	
Test Weights (120kg)	
Dummy	
Tilt Bed	
Force Tester	
Tilt Bed Sliding Obstruction	
Spirit Level	
Tape Measure	
Marker Pen	





Test Details	
<p>Clause 9.4.2.1</p>	
<p>1) The chair is placed onto the Tilting Bed – Sideways Stability in Transport Position.</p>	
<p>2) The Spirit Level shows that the Tilt Bed is perfectly horizontal.</p>	
<p>3) The chair is loaded with the SWL (120kg), the load is applied using a test dummy (75kg) to represent normal use and load distribution. The additional weight (45kg) is strapped to the dummies back and chest for worst case scenario loading.</p>	
<p>4) The chair is tilted with the SWL in Transport Position sideways to 10 degrees.</p>	

<p>5) The chair is now positioned in its forward position, the direction of travel.</p>	
<p>6) The chair is loaded with the SWL (120kg), the load is applied using a test dummy to represent normal use and load distribution. The additional weight is strapped to the dummies back and chest for worst case scenario loading.</p>	
<p>7) The chair is tilted with the SWL in Transport Position to 10 degrees.</p>	
<p>8) The chair is now positioned in its backward position.</p>	
<p>9) The chair is loaded with the SWL (120kg), the load is applied using a test dummy to represent normal use and load distribution. The additional weight is strapped to the dummies back and chest for worst case scenario loading.</p>	

<p>10) The chair is tilted with the SWL in Transport Position to 10 degrees.</p>	
<p>Clause 9.4.2.1 (worst-case position)</p>	
<p>1) The chair is placed onto the Tilting Bed – Sideways Stability in Non-Transport Position (worst case).</p>	
<p>2) The Spirit Level shows that the Tilt Bed is perfectly horizontal.</p>	
<p>3) The chair is loaded with the SWL (120kg), the load is applied using a test dummy (75kg) to represent normal use and load distribution. The additional weight (45kg) is strapped to the dummies back and chest for worst case scenario loading.</p>	
<p>4) The chair is tilted with the SWL in Non-Transport Position (worst case) to 10 degrees.</p>	

<p>The chair is now positioned in its forward position (worst case), the direction of travel.</p>	
<p>5) The chair is loaded with the SWL (120kg), the load is applied using a test dummy to represent normal use and load distribution. The additional weight is strapped to the dummies back and chest for worst case scenario loading.</p>	
<p>6) The chair is tilted with the SWL in Non-Transport Position (worst case) to 8.4 degrees.</p>	
<p>7) The chair is now positioned in its backward position.</p>	
<p>8) The chair is loaded with the SWL (120kg), the load is applied using a test dummy to represent normal use and load distribution. The additional weight is strapped to the dummies back and chest for worst case scenario loading.</p>	
<p>9) The chair is tilted with the SWL in Non-Transport Position (worst case) to 10 degrees.</p>	

Clause 9.4.2.3.a	
10) The chair is placed on the Tilt Bed but kept at a horizontal angle. The Castors are against the obstruction to avoid sliding.	
11) A height of 1.5m is measured to determine the contact area for the test.	
12) The digital force tester is used to apply at least 150N to the product. The gauge is set to measure the maximum force output reading.	
13) The force gauge is placed against the Headrest to perform the sideways Instability from the horizontal and vertical forces test. This test was completed with and without the SWL. see test results.	 <p style="text-align: center;">With SWL</p>  <p style="text-align: center;">Without SWL</p>
14) The force gauge is placed against the front of the seat to perform the backwards Instability from the horizontal and vertical forces test. This test was completed with and without the SWL. see test results.	 <p style="text-align: center;">With SWL</p>

	 <p style="text-align: center;">Without SWL</p>
<p>15) The force gauge is placed against the back of the chair to perform the forwards Instability from the horizontal and vertical forces test.</p> <p>This test was completed with and without the SWL.</p> <p>see test results.</p>	 <p style="text-align: center;">With SWL</p>  <p style="text-align: center;">Without SWL</p>
<p>Clause 9.4.2.3.b</p>	
<p>1) The chair is placed on the Tilt Bed but kept at a horizontal angle. The Castors are not against the obstruction but are applied to avoid sliding.</p>	
<p>2) The base Frame offers potential misuse as it could be stood on with a person's full weight.</p>	

Test comments

The castors for the Asiento size 3 have recently been modified, castor size is now 100mm. The new castors were tested to clause 9.4.2.1, the new castors-maintained stability during the 10° tilt test in each direction (forwards, sideways and backwards). All these tests were completed in the transport position. In conclusion the new bigger castors are deemed compliant to clause 9.4.2.1.

Please find an image of new castors below



Test Results

Clause: 9.4.2.1 - With SWL

The Asiento completed clause 9.4.2.1 – instability in transport position. The Asiento completed the 10° tilt in backwards and sideways transport and non- transport positions and did not overbalance. The forward tilt test began to over balance at 8.4°, because of this the chair was the tested in the transport position (backrest at 90° and the chair at its lowest point). The Asiento completed this with the Safe Working Load (**120KG**). Due to the product not reaching 10° outside of transport position, a clearly described instruction for use indicating that transport should only be done under “transport position” conditions.

Clause: 9.4.2.3.a - With SWL

The Asiento was then tested to the requirements of 9.4.2.3.a – Instability from horizontal and vertical forces. The Asiento completed the requirements for this clause, the maximum force specified (**150N**) was applied to the Asiento in all directions horizontally the asiento was positioned first in the non-Transport (worst-case) position facing sideways, the chair would over balance at **154.5N**, this is within the requirements of clause 9.4.2.3.a, the chair was then positioned in the non-Transport (worst-case) position facing forwards. A force of **105N** was applied to the back of the headrest when overbalance occurred when performing this test. This is under 150N therefore, Due to this failure, the asiento size 3 must be permanently marked with a clearly legible warning of this risk. The chair was then positioned in the non-Transport (worst-case) position facing backwards, a force of **151.5N** was applied to the seat of the chair when overbalance occurred. The chair completed the requirements of this test as it did not overbalance before the minimum force requirement. This test was completed with the Safe Working Load.

Without SWL

The chair then repeated this test without the SWL in place but maintains the same set up as before. The chair failed to reach 150N in all directions, with a forward overbalance point of **67N**, backward overbalance point of **73N** and a sideways overbalance point of **96.5N**. Due to this failure, the asiento size 3 must be permanently marked with a clearly legible warning of this risk.

Clause 9.4.2.3.b

The Asiento was finally tested to the requirements of 9.4.2.3.b – Instability from horizontal and vertical forces. The Asiento completed the requirements of this clause, with the corners of the base being potential footholds or sitting surfaces. **800N** where applied vertically to each component and the chair did not overbalance. This test was completed with and without the Safe Working Load.

Test Conclusion	
Clause:	Pass/Fail
9.4.1	PASS
9.4.2.1	PASS
9.4.2.3.a	PASS
9.4.2.3.b	PASS
All clauses have been adhered to and are compliant to the requirements of the Standard. Therefore, the Static Stability Test Requirements for the Smirthwaite Asiento size 3 (025562) are compliant.	

END OF REPORT