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Test Request Number: AFT-00373

Requester:	Versa Tables 14105 Avalon Blvd. Los Angeles, CA 90061
Contact Name / Number:	Jonathan Spicer / 310-353-7100 ext. 107
Dates Tested:	10/10/09 -10/17/09
Date Submitted:	10/20/09
Technician:	Jon Roblin
Customer Request I.D.	N/A

**Scope:** To test the 72" Revolution table for BIFMA compliance. 72" table was used for testing as it was deemed to be the worst case size. Model is also available in a 48" model.

**Requested Tests:**

<u>Test Name</u>	<u>Requirement</u>
Stability Under Vertical Load Test	ANSI/BIFMA X5.5-2008, Section 4.3
Horizontal Stability for Desk/Tables with Casters	ANSI/BIFMA X5.5-2008, Section 4.4
Concentrated Functional Load Test	ANSI/BIFMA X5.5-2008, Section 5.2
Distributed Functional Load Test	ANSI/BIFMA X5.5-2008, Section 5.3
Concentrated Proof Load Test	ANSI/BIFMA X5.5-2008, Section 5.4
Distributed Proof Load Test	ANSI/BIFMA X5.5-2008, Section 5.5
Top Load Ease Cycle Test	ANSI/BIFMA X5.5-2008, Section 6
Desk/Table Unit Drop Test	ANSI/BIFMA X5.5-2008, Section 7
Leg Strength Test	ANSI/BIFMA X5.5-2008, Section 8
Keyboard Support and Input Device Support Adjustment Test	ANSI/BIFMA X5.5-2008, Section 16
Durability Test for Desks and Tables with Casters	ANSI/BIFMA X5.5-2008, Section 18

**Product Description:**

<u>Specimen</u>	<u>Description</u>	<u>Supplier</u>
1	72" Revolution table (p/n RST7230)	Versa Tables

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**Summary:**

<u>Test Name</u>	<u>Results</u>
Stability Under Vertical Load Test	Passed
Horizontal Stability for Desk/Tables with Casters	Passed
Concentrated Functional Load Test	Passed
Distributed Functional Load Test	Passed
Concentrated Proof Load Test	Passed
Distributed Proof Load Test	Passed
Top Load Ease Cycle Test	Passed
Desk/Table Unit Drop Test	Passed
Leg Strength Test	Passed
Keyboard Support and Input Device Support Adjustment Test	Passed
Durability Test for Desks and Tables with Casters	Passed

**Test Results:**

**1. Stability Under Vertical Load Test:**

Testing was performed per ANSI/BIFMA X5.5-2008, Section 4.3.

**Notes:**

- Temperature / humidity 69° F / 49 RH%.
- Specimen placed at the highest adjustment point.
- 125 lb. load applied through a 12" disc.
- Disc position 1" in from the front edge, centered side to side.
- Test then repeated with the disc located 1" from the rear edge.
- See Photo 1 for set up.



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**1. Stability Under Vertical Load Test (cont.):**

<u>Specimen</u>	<u>Location</u>	<u>Observations</u>
1	Front edge	Unit did not tip over.
	Rear edge	Unit did not tip over.

**Requirement:** *The unit shall not tip over. If an extendible element opens during the test and prevents the unit from tipping over due to contact with the test platform, the unit does not meet the acceptance criteria*

Equipment:	Tape measure (TD-029)
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**2. Horizontal Stability for Desk/Tables with Casters:**

Testing was performed per ANSI/BIFMA X5.5-2008, Section 4.4.

**Notes:**

- Temperature / humidity 69° F / 49 RH%.
- Specimen placed at the highest adjustment point.
- 25 lb. load applied through an 8" disc.
- Disc positioned flush with the rear edge centered side to side.
- Horizontal force applied to the center of the front edge until 10 lbs. of force or 10° of tip was achieved.
- Test was then repeated with the disc located flush with the front edge.
- See Photo 2 for set up.



**2. Horizontal Stability for Desk/Tables with Casters (cont.):**

<u>Specimen</u>	<u>Disc Location</u>	<u>Observations</u>
1	Rear	10 lb. force applied. Unit did not tip. Force to tip = 28.4 lbs. Angle at balance point = 11.5°
	Front	10 lb. force applied. Unit did not tip. Force to tip = 48.9 lbs. Angle at balance point = 21.0°

**Requirement:** *The unit shall not tip over. If an extendible element opens during the test and prevents the unit from tipping over due to contact with the test platform, the unit does not meet the acceptance criteria*

Equipment:	Tape measure (TD-029), Force gauge (TD-007), Digital protractor (TD-004)
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**3. Concentrated Functional Load Test:**

Testing was performed per ANSI/BIFMA X5.5-2008, Section 5.2.

**Notes:**

- Temperature / humidity 69° F / 49 RH%.
- Specimen placed at the highest adjustment point.
- Two 200 lb. loads applied through 12" discs centered 36" apart, 1" in from the front edge.
- Load applied for 60 minutes
- See Photo 3 for set up

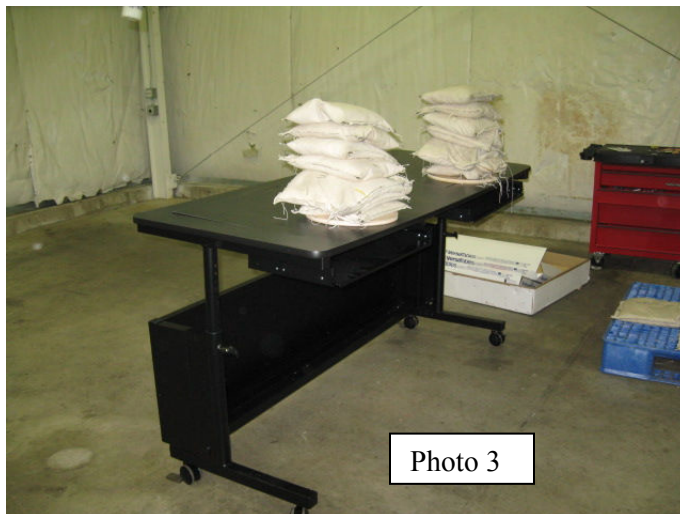


Photo 3

**3. Concentrated Functional Load Test (cont.):**

<u>Specimen</u>	<u>Load (lbs.)</u>	<u>Time (min.)</u>	<u>Observations</u>
1	2 x 200	60	No loss of serviceability.

**Requirement:** *There shall be no loss of serviceability. Upon completion of the test, the extendible member(s) shall meet the pull force requirements of Section 19.*

Equipment:	Tape measure (TD-029), Stopwatch (TD-002)
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**4. Distributed Functional Load Test:**

Testing was performed per ANSI/BIFMA X5.5-2008, Section 5.3.

**Notes:**

- Temperature / humidity 69° F / 49 RH%.
- Specimen placed at the highest adjustment point.
- 204" of perimeter x 1.5 = 306 lbs.
- 66 lbs. on each of the keyboard trays, which were fully extended during the test.
- Load applied on a line 8" in from the edge around the entire perimeter.
- Load applied for 60 minutes
- See Photo 4 for set up



Photo 4

<u>Specimen</u>	<u>Load (lbs.)</u>	<u>Time (min.)</u>	<u>Observations</u>
1	306	60	No loss of serviceability.

**Requirement:** *There shall be no loss of serviceability. Upon completion of the test, the extendible member(s) shall meet the pull force requirements of Section 19.*

Equipment:	Tape measure (TD-029), Stopwatch (TD-002)
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**5. Concentrated Proof Load Test:**

Testing was performed per ANSI/BIFMA X5.5-2008, Section 5.4.

**Notes:**

- Temperature / humidity 72° F / 36 RH%.
- Specimen placed at the highest adjustment point.
- Two 300 lb. loads applied through 12" discs centered 36" apart, 1" in from the front edge.
- Load applied for 15 minutes
- See Photo 5 for set up



<u>Specimen</u>	<u>Load (lbs.)</u>	<u>Time (min.)</u>	<u>Observations</u>
1	300	15	No sudden and major change in structural integrity.

**Requirement:** *There shall be no sudden and major change in structural integrity of the product. Loss of serviceability is acceptable.*

Equipment:	Tape measure (TD-029), Stopwatch (TD-002)
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**6. Distributed Proof Load Test:**

Testing was performed per ANSI/BIFMA X5.5-2008, Section 5.5.

**Notes:**

- Temperature / humidity 72° F / 36 RH%.
- Specimen placed at the highest adjustment point.
- 204" of perimeter x 2.3 = 469 lbs.
- 100 lbs. on each of the keyboard trays, which were fully extended during the test.
- Load applied on a line 8" in from the edge around the entire perimeter.
- Load applied for 15 minutes
- See Photo 6 for set up



<u>Specimen</u>	<u>Load (lbs.)</u>	<u>Time (min.)</u>	<u>Observations</u>
1	469	15	No sudden and major change in structural integrity.

**Requirement:** *There shall be no sudden and major change in structural integrity of the product.  
 Loss of serviceability is acceptable.*

<b>Equipment:</b>	Tape measure (TD-029), Stopwatch (TD-002)
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**7. Top Load Ease Cycle Test:**

Testing was performed per ANSI/BIFMA X5.5-2008, Section 6.

**Notes:**

- Temperature / humidity 70-71° F / 39-47 RH%.
- Specimen placed at the midpoint of adjustment.
- 200 lb. load applied through a 16" bag.
- Bag position 1" in from the front edge, centered side to side.
- Load applied without impact and removed once per cycle.
- 10,000 cycles at a rate of 17 cycles per minutes.
- See Photo 7 for set up.

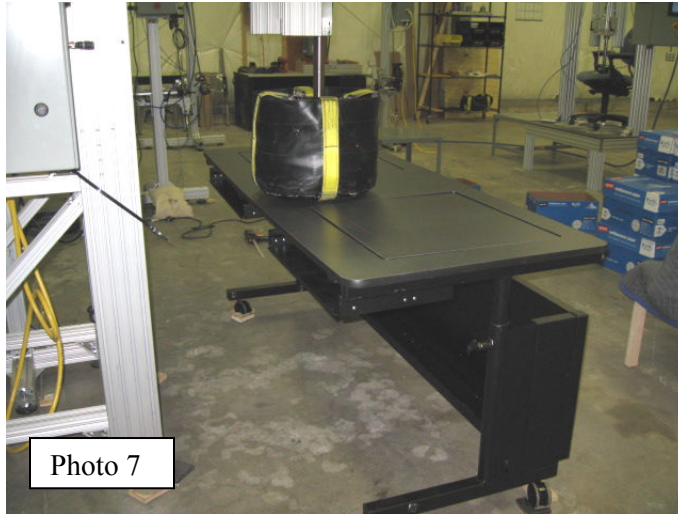


Photo 7

<u>Specimen</u>	<u>Cycles</u>	<u>Observations</u>
1	0	Test begun.
	10,000	No loss of serviceability.

**Requirement:** *There shall be no loss of serviceability. Before and after the cycling test, the extendible member(s) shall meet the pull force requirements of Section 19.*

Equipment:	Test Machine (TM-003), Tape measure (TD-011), Stopwatch (TD-002)
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**8. Desk/Table Unit Drop Test:**

Testing was performed per ANSI/BIFMA X5.5-2008, Section 7.

**Notes:**

- Temperature / humidity 70° F / 47 RH%.
- Specimen placed at the midpoint of adjustment.
- Based on table weight (145 lbs.), each end of the table dropped from a height of 7.1”.
- See Photo 8 for set up



<u>Specimen</u>	<u>End Raised</u>	<u>Observations</u>
1	Right	No loss of serviceability.
	Left	No loss of serviceability.

**Requirement:** *There shall be no loss of serviceability. Before and after the drop test, the extendible member(s) shall meet the pull force requirements of Section 19.*

Equipment:	Tape measure (TD-029), Scale (TD-008)
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**9. Leg Strength Test:**

Testing was performed per ANSI/BIFMA X5.5-2008, Section 8.

**Notes:**

- Temperature / humidity 73° F / 50 RH%.
- Forces based on table weight (145 lbs.), were as follows:

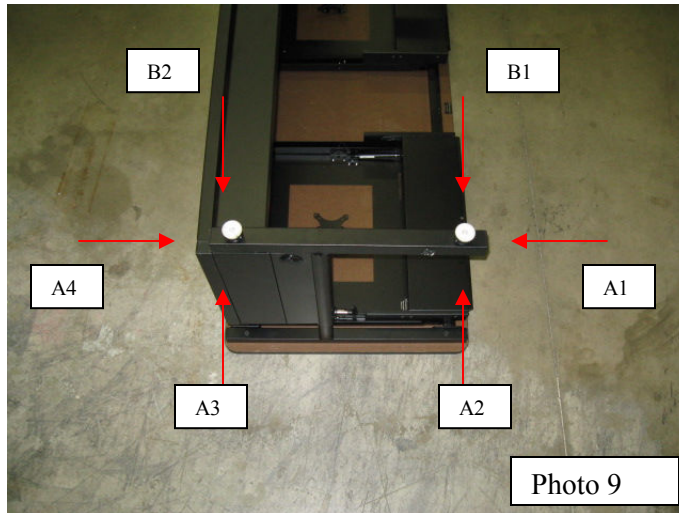
Functional A = 100 lbs

Functional = 50 lbs

Proof A = 150 lbs

Proof B = 75 lbs

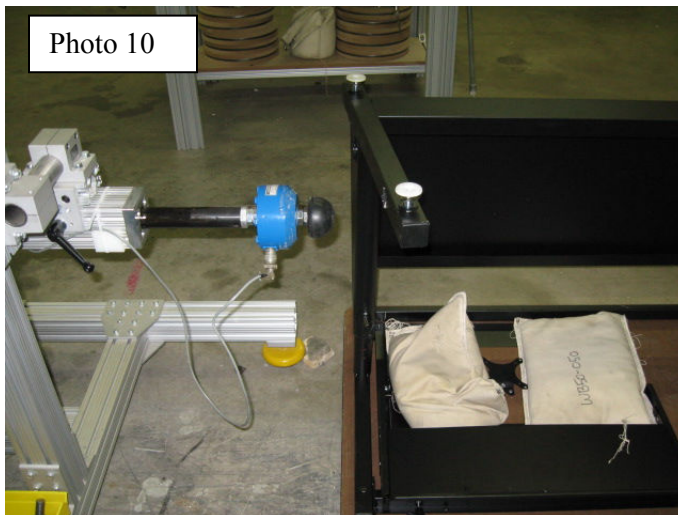
- See Photo 11 for load directions.



<u>Specimen</u>	<u>Force</u>	<u>Direction</u>	<u>Observations</u>
1	Functional	A1	No loss of serviceability.
		A2	No loss of serviceability.
		A3	No loss of serviceability.
		A4	No loss of serviceability.
		B1	No loss of serviceability.
		B2	No loss of serviceability.

**9. Leg Strength Test (cont.):**

<u>Specimen</u>	<u>Force</u>	<u>Direction</u>	<u>Observations</u>
	Proof	A1	No sudden and major change in structural integrity.
		A2	Leg bent inward approximately 6" with some permanent set when load was removed (see Photo 10) No sudden and major change in structural integrity.
		A3	No sudden and major change in structural integrity.
		A4	No sudden and major change in structural integrity.
		B1	No sudden and major change in structural integrity.
		B2	No sudden and major change in structural integrity.



***Requirement:***

***Functional Load:***

*No loss of serviceability shall occur as a result of the application of the functional loads. After application of the functional loads, each extendible element in the leg attached desk pedestal shall be tested to and meet the pull force requirements of Section 19.*

***Proof Load:***

*Application of the proof loads shall cause no sudden and major change in structural integrity of the product. Loss of serviceability is acceptable.*

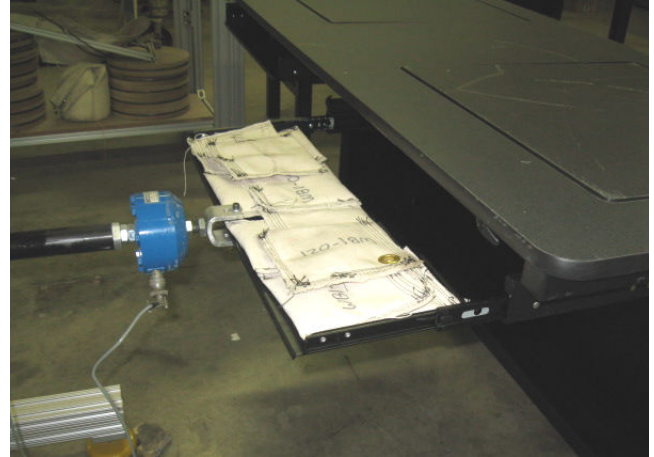
<b>Equipment:</b>	Test machine (TM-010), Force gauge (TD-055), Scale (TD-008)
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**10. Keyboard Support and Input Device Support Adjustment Test:**

Testing was performed per ANSI/BIFMA X5.5-2008, Section 16.

**Notes:**

- Temperature / humidity 70-71° F / 35 RH%.
- 10 lb. load evenly distributed across the surface
- Surface cycled horizontally from fully retracted to the fully extended position and back once per cycle.
- 2,500 cycles at 6 cycles per minute.
- See Photos 11 and 12 for set up.



<u>Specimen</u>	<u>Cycles</u>	<u>Observations</u>
1	0	Test begun.
	2,500	No loss of serviceability.

**Requirement:** *There shall be no loss of serviceability.*

<b>Equipment:</b>	Test machine (TM-010), Stopwatch (TD-002), Tape measure (TD-029)
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**11. Durability Test for Desks and Tables with Casters**

Testing was performed per ANSI/BIFMA X5.5-2008, Section 18.

**Notes:**

- Temperature / humidity 70° F / 47 RH%.
- Specimen placed at the midpoint of adjustment.
- Based on weight (112 lbs.), specimen was subjected to 100 cycles over 1/8" thresholds, then 1,000 cycles over a smooth plate.
- 85 lb. load applied to the center of the top through a 12" disc
- 11 cycles per minutes.
- See Photo 13 (smooth plate) for set up



<u>Specimen</u>	<u>Cycles</u>	<u>Observations</u>
1	0	Test begun over thresholds.
	100	No loss of serviceability. Thresholds removed
	0	Test begun over smooth plate.
	1,000	No loss of serviceability.

**Requirement:** *There shall be no loss of serviceability to a caster or the desk/table*

Equipment:	Test machine (TM-011), Stopwatch (TD-002), Scale (TD-008)
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