BenchPro
(Test Report)

BIFMA INTERNATIONAL

General-Porpuse Office Chairs – Test
American National Standart for Office Furniture

CHAIR TEST NAME: 5.- BACKREST STRENGHT TEST-STATIC-TYPE I, LNS3-F

START DATE: DECEMBER-05-2012 START HOUR: 15: 20

END DATE: DECEMBER-11- 2012,

Chair tests:

__X_ Backrest Stregth Test – Static (Type I)

__X_ Backrest Stregth Test – Static (Type II, III)

___ Base Test – Static

___ Drop Test – Dynamic

___ Swivel Test – Cyclic

___ Tilt Mechanism Test – Cyclic

__ Seating Durability Test – Cyclic

___ Stability tests

___ Arm Stregth Test – Vertical – Static

___ Arm Stregth Test – Horizontal – Static

___ Backrest Durability Test – Cyclic (Type I)

___ Backrest Durability Test – Cyclic (Type II, III)

___ Caster/Chair Base Durability Test - Cyclic

___ Leg Straght Test – Front and Side Application

___ Footrest Durability Test – Vertical - Cyclic

___ Arm Durability Test - Cyclic

___ Out Stop Test for chairs with Manually Adjustable Seat Depth

___ Tablet Arm Static Load Test

___ Tablet Arm Load Ease Test Cyclic

Type chair:

____X_____ Type I - Tilting Chair

_____ Type II – Fixed seat angle, tilting backrest

_____ Type III – Fixed seat angle, fixed backrest

5.1 Applicability

This backrest strength test shall be performed on type I chair. For chairs with tilt locks, locking the chair changes the chair type and must also be tested according to section 6 in the upright locked position. An additional chair may be used for the section 6 testing.

5.2 Purpose of test

The purpose of this test is to evaluate the ability of the chair to withstand stresses such as those caused by the user exerting a rearward force on the backrest of the chair.

5.3 Test setup

5.3.1 The chair shall be placed on a test platform in an upright position and the base shall be restrained from movement, but shall not restrict movement of the backrest or arms of the chair. Figure 5e shows one acceptable method of restraining the chair.

5.3.2 if adjustable features are available, all adjustments shall be set at normal use conditions, except for height – adjustable pivoting backrests which shall have the pivot point set at its maximum height or 406 mm (16 in) whichever is less.

5.3.3 after making above adjustments, determinate points 406 mm (16 in) and 452 mm (17.8 in) above the seat. mark these point on the vertical centerline of the backrest.

a) if the top of the load-bearing structure/surface of the backrest its ≥ 452 mm (17.8 in) above the seat .

b) if the top of the load-bearing structure/surface of the backrest its less than 452 mm (17.8 in) above the seat, position the top of the form-fitting device even with the top of the load-bearing structure/surface.

c) if the unit has a pivoting backrest rest that stops at the position ≤ 30 degrees rearward of vertical (whit the support structure in its most upright position), position the form-fitting device has directed in a) or b). if the unit has a pivoting backrest that stops at the position greater than 30 degrees rearward of vertical(with the support structure in its most upright position), position the center of the form-fitting device at the height of the pivoting point .

5.3.4 Attach a loading device (front push or back pull) to the horizontal center of the backrest as determinate above. The force shall be applied 90° ± 10° to the plane of the backrest when at the back stop position (see figure 5e). if applying the load with a cable and attachment point to the pulley. Note: where the design of the chair does not allow the transfer of force from the loading device to the load-bearing structure/surface a bridging device not exceeding 89±13mm (3.5 ± .5 in). in height may be used to span the width of the load-

bearing structure/surface. The plane of the backrest may be defined by the front of the CMD upright.

5.4 Test procedures:

5.4.1 Functional load

A) A force of 890 N (200 lbf) shall be applied to the backrest at the back stop position for 1 minute. If the backrest/tilt locks mechanism during the load application set the backrest to its most rearward (stopped) position, then applied the specific load(s).

b) Remove the load and evaluate the product in accordance with the acceptance level in 5.5.1.

5.4.2 Proof load

a) A force of 1334 N (300 lbf) shall be applied to the backrest at the back stop position for 1 minute. If the backrest/tilt locks mechanism during the load application set the backrest to its most rearward (stopped) position, then applied the specific load(s).

b) Remove the load and evaluate the product in accordance with the acceptance level in 5.5.2.

5.5 Acceptance level

5.5.1 Functional load , There shall be no loss of serviceability to the chair.

5.5.2 Proof load, There shall be no sudden and major change in the structural integrity of the chair. Loss of serviceability is acceptable.

Conclusion:

All the chair components looks good after of the durability test.

Seat, Cylinder, Back bar, Lever mech., Base and casters.

Test: Pass

Video: Done

6 Backrest strength test – static – type II and III, (continued)

6.1 Applicability

This backrest strength test shall be performed on type II and III chair.

6.2 Purpose of test

The purpose of this test is to evaluate the ability of the chair to withstand stresses such as those caused by the user exerting a rearward force of the backrest of the chair.

6.3 Test setup

6.3.1 the chair shall be placed on a test platform in an upright position and the base shall be restrained from movement, but shall not restrict movement of the backrest or arms of the chair. Figure 6e shows one acceptable method of restraining the chair.

6.3.2 after making the above adjustments determinate the points 406 mm (16 in) and 452(17.8 in) above the seat. See figure 6a. mark these points on a vertical centerline of the backrest.

a) If the top of the loading-bearing structure/surface of the backrest is greater than or equal to 452 mm (17.8 in) above the seat. See figure 6b.
b) If the top of the loading-bearing structure/surface of the backrest is less than 452 mm (17.8 in) above the seat, position the top of the form-fitting device even with the top of the load-bearing structure/surface. See figure 6c.
c) If the unit has a pivoting backrest that stops at a position less than or equal to 30 degrees rearward or vertical (with the support structure in its most upright position), position the form-fitting device as directed in a) or b).if the unit as a pivoting backrest that stops at the position greater than 30 degrees rearward of vertical (with the support structure in its most upright position), position the center of the form-fitting device at the height of the pivoting point. See figure 6d.

6.3.4 Attach a loading device (front push or back pull) to the horizontal center of the backrest as determinate above. The force shall be applied 90° ± 10° to the plane of the backrest when at the back stop position. See figure 6e. if applying the load with a cable and pulley system, the cable must initially be a minimum of 750 mm (30 in) in length from the attachment point t the pulley. For backrest with complex or varying contours, the plane of the backrest may be defined by the front of the CMD upright. Note: where the design of the chair does not allow the transfer of the force from the loading device not exceeding 89 ± 13 mm (3.5 ± .5 in) in height may be used to span the width of the load-bearing structure-surface.

6.4.1 Functional load

A) A force of 667 N (150 lbf) shall be applied to the backrest at the back stop position for 1 minute. If the backrest/tilt locks mechanism will not accept the load due to gradual slipping of the adjustment mechanism during the load application set the backrest to its most rearward (stopped) position, then apply the specific load(s).

b) Remove the load and evaluate the product in accordance with the acceptance level in 6.5.1.

6.4.2 Proof load

A) A force of 1112 N (250 lbf) shall be applied to the backrest at the back stop position for 1 minute. If the backrest/tilt locks mechanism will not accept the load due to gradual slipping of the adjustment mechanism during the load application set the backrest to its most rearward (stopped) position, then apply the specific load(s).

B) Remove the load and evaluate the product in accordance with the acceptance level in 6.5.1.

6.5 Acceptance level

6.5.1 Functional load

A functional load applied once shall be cause no loss of serviceability to the chair.

6.5.2 Proof load

A proof load applied once shall cause no sudden and major change in the structural integrity of the chair. Loss of serviceability is acceptable.

Acceptable Level: There shall be no loss of serviceability to the chair after completion of both the impact and load-ease tests.

Conclusion:

All the chair components looks good after of the durability test.

Seat, Cylinder, Back bar, Lever mech., Base and casters.

Test: Pass

Video: Done