

TEST REPORT (TRANSLATION)

CUSTOMER: **ENEA-EREDU S. COOP**

PERSON REQUESTING THE TEST: **IÑAKI ELIZEGI**

ADDRESS: **APARTADO 97,
20250 LEGORRETA (GIPUZKOA)**

MATERIAL TESTED: **«LOTTUS» SERIES CHAIR**

PURPOSE OF THE REQUEST: **TESTS IN ACCORDANCE WITH UNE-EN
15373:2007**

DATE OF RECEIPT: **29.03.2010**
TEST STARTING DATE: **30.03.2010**
TEST COMPLETION DATE: **27.04.2010**
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The results included in this report only refer to the material received and subjected to testing in this Research Centre on the dates indicated.

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The tests marked with an (*) are outside the scope of LE024 accreditation by ENAC for tests on furniture.

In case of a lawsuit, the original Spanish report No. 24797 shall be taken as reference



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FEATURES OF THE SAMPLE

On the 29th of March CIDEMCO received a «**LOTTUS**» series chair from the company ENEA-EREDU S. COOP, with the following characteristics:



Chair with 4 legs with armrests

TESTS REQUESTED

Tests have been requested on the chair in accordance with the UNE-EN 15373:2007 standard «*Furniture. Resistance, durability and safety. Requirements for seats for non-domestic use*» at test level 3 (for severe use), which corresponds to those used in night clubs, police stations, transport terminals, public areas of hospitals, casinos, old people's homes, sports changing rooms, prisons and barracks. The tests requested have been as follows:

1. ***Safety requirements**, in accordance with UNE-EN 15373:2007
2. **Stability**, in accordance with UNE-EN 1022:2005
 - 2.1. Lateral overturn of chairs with armrests (section 6.5)
3. **Static load tests**, in accordance with UNE-EN 1728:2001
 - 3.1. Static load on seat and back (section 6.2.1)
 - 3.2. Static load on front edge of seat (section 6.2.2)
 - 3.3. *Vertical static load on back (Annex A.2, UNE-EN 15373:2007)
 - 3.4. Lateral static load on armrests (section 6.5)
 - 3.5. Static load of armrests subjected to downward vertical force (section 6.6)
 - 3.6. *Upward vertical static load (Annex A.1, UNE-EN 15373:2007)
4. **Durability tests**, in accordance with UNE-EN 1728:2001
 - 4.1. Combined fatigue test on seat and back (section 6.7)
 - 4.2. Fatigue on front edge of seat (section 6.8)
 - 4.3. Fatigue on armrests (section 6.10)
5. **Tests on legs**, in accordance with UNE-EN 1728:2001
 - 5.1. Static load on front legs (section 6.12)
 - 5.2. Lateral static load (section 6.13)
6. **Impact tests**, in accordance with UNE-EN 1728:2001
 - 6.1. Impact on seat (section 6.15)
 - 6.2. Impact on back (section 6.16)
 - 6.3. Impact on armrests (section 6.17)

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TESTS CARRIED OUT AND RESULTS

1. *SAFETY REQUIREMENTS

The test was carried out in accordance with the UNE-EN 15373:2007 standard «*Furniture. Resistance, durability and safety. Requirements for seats for non-domestic use*», and the requirements to be checked both visually and by tactile means are as follows:

- The edges of the seat, armrests and back that come into contact with the user when they are sitting down are either rounded or bevelled.
- All the edges are free of burrs or sharp edges.
- The ends of the hollow components are either covered or closed.
- No part of the seat structure should be able to become unintentionally loose.
- There are no shearing or clamping points during use.

RESULT: SATISFACTORY

2. STABILITY

The test was carried out in accordance with UNE-EN 1022:2005 «*Domestic Furniture. Seats. Determining Stability*»

The chair should not tilt under the following conditions:

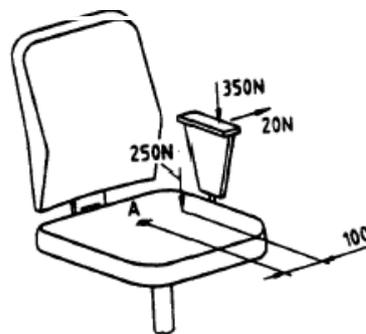
- a) When leaning back above an armrest

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2.1. Lateral overturn test. Chairs with armrests (section 6.5), in accordance with UNE-EN 1022:2005

A vertical force of 250 N is applied at 100 mm from the symmetric axis of the seat towards the side of the blocked feet, and between 175 mm and 250 mm in front of the back part of the seat. A vertical force of 350 N is applied on the arm axis at 40 mm from the outermost edge of the latter and in its most adverse position.

A horizontal traction force of 20 N is applied towards the outside of the chair for a minimum duration of 5 seconds.



RESULT: SATISFACTORY

3. STATIC LOAD TESTS

Except where otherwise indicated, the tests were carried out in accordance with the UNE-EN 1728:2001 standard «*Domestic Furniture. Seats. Test methods for determining Resistance and Durability*», the section referred to in each case.

3.1. Static load test on seat and back (section 6.2.1)

After immobilizing the chair with wedges on the back part of the base, a force of 2000 N is then applied on the seat and another of 700 N on the back. 10 cycles are applied in this way.

The chair does not experience any damage and continues functioning properly as a consequence of the tests.

RESULT: SATISFACTORY

3.2. Static load test on front edge of seat (section 6.2.2)

After immobilizing the chair with wedges on the back part of the base, a force of 2000 N is then applied at 80 mm from the front edge, on the front axis. 10 cycles are applied in this way.

No warping is noted as a consequence of the tests.

RESULT: SATISFACTORY

3.3. *Vertical load tests on back (Annex A.2), in accordance with the EN 15373:2007 standard

A vertical load of 900 N is applied on the back and another of 1800 N on the seat. 10 cycles are applied in this way.

No warping is noted as a consequence of the tests.

RESULT: SATISFACTORY

3.4. Lateral static load test on armrests (section 6.5)

A load of 900 N is applied in an outward direction simultaneously on each armrest, at the point considered to be the most unfavourable on the latter but at least 100 mm from any of the ends of the armrest structure. The forces are applied 10 times.

No warping is noted after the test.

RESULT: SATISFACTORY

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3.5. Static load test on armrests subjected to downward vertical force (section 6.6)

A vertical force of 1000 N is applied 10 times at the points on an armrest considered to be most unfavourable.

No warping is noted after the test.

RESULT: SATISFACTORY

3.6. *Upward vertical static load test (Annex A.1) in accordance with the EN 15373:2007 standard

An upward force is applied 10 times that is sufficient to lift the seat simultaneously by both arms as far as the equilibrium point. The force is maintained for at least 10 seconds.

RESULT: SATISFACTORY

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4. DURABILITY TESTS

The tests were carried out in accordance with the UNE-EN 1728:2001 standard «*Domestic Furniture. Seats. Test methods for determining Resistance and Durability*».

4.1. Combined fatigue test on seat and back (section 6.7)

A vertical load of 1000 N is applied on the load point of the seat while another horizontal force of 300 N is applied at the same time on the load point of the back. Both loads are then removed, first that on the back and then that on the seat, and the process is repeated over 200,000 cycles.

No warping is noted after the test.

RESULT: SATISFACTORY

4.2. Fatigue test on front edge of seat (section 6.8)

The test involves applying two vertical loads of 1000 N, alternating between two points located at 80 mm from the front edge of the seat and as close as possible to the lateral edges, albeit at a distance of over 80 mm from the aforementioned edges. 100,000 cycles are applied in this way.

No warping is noted after the test.

RESULT: SATISFACTORY

4.3. Fatigue test on armrests (apt. 6.10), in accordance with the UNE-EN 1728:2001 standard

The test involves immobilizing the chair and applying a vertical load of 400 N at 100 mm from the front edge of each armrest, forming an angle of 10° in relation to the vertical. 100,000 cycles are applied in this way.

No warping is noted after the test.

RESULT: SATISFACTORY

5. TESTS ON LEGS

The tests were carried out in accordance with the UNE-EN 1728:2001 standard «*Domestic Furniture. Seats. Test methods for determining Resistance and Durability*».

5.1. Static load test on front legs (section 6.12)

Once the chair has been immobilized with wedges on the front legs and after placing a load of 1800 N on the seat, a horizontal force of 620 N is then applied at the midway point of the back edge of the seat, facing the latter. The force is applied 10 times.

No warping is noted after the test.

RESULT: SATISFACTORY

5.2. Lateral static load test (section 6.13)

Once the chair has been immobilized with wedges on the front legs of one side and after placing a load of 1800 N on the seat, a horizontal force of 760 N is then applied on the side of the seat opposite the wedges, at a point no further than 150 mm from the edge. The force is applied 10 times.

No warping is noted after the test.

RESULT: SATISFACTORY

6. IMPACT TESTS

The tests were carried out in accordance with the UNE-EN 1728:2001 standard «*Domestic Furniture. Seats. Test methods for determining Resistance and Durability*».

6.1. Impact test on seat (section 6.15)

The test involves placing a piece of foam on the seat at the load point, and dropping an impactor 10 times from a height of 300 mm.

No warping is noted after the test.

RESULT: SATISFACTORY

6.2. Impact test on back (section 6.16)

The test involves placing the chair with its front legs secured by wedges to prevent any forward movements. The upper part of the back is hit 10 times in the centre, outwards to inwards, using an impact hammer. The impact hammer is dropped from a height of 620 mm.

RESULT: SATISFACTORY

6.3. Impact test on armrests (section 6.17)

The test was carried out in the same way as the impact test on the back, but in this case the hammer is dropped from a height of 620 mm.

RESULT: SATISFACTORY