



CIDEMCO

TECHNOLOGY INVESTIGATION CENTRE
Test Laboratory

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TEST CERTIFICATE

COMPANY

ENE A EREDU S. COOP.

Address

Apartado 97 20250 LEGORRETA (GIPUZKOA)

Certificate no.

5274

ACREDITACIONES:



ENAC: 34/LE162.	Windows
ENAC: 34/LE346. para edificación	Iron fittings for buildings
ENAC: 34/LE347.	Woodwork
ENAC: 34/LE347. madera	Wooden floors
ENAC: 34/LE345.	Varnishes
ENAC: 34/LE345.	Paint
ENAC: 34/LE210. de partículas y fibra	Grain & fibre boards
ENAC: 34/LE210.	Adhesives
ENAC: 34/LE024. de cocina	Kitchen furniture

ASOCIADO A:

ENAC
(Entidad Nacional de
Acreditación)

ASEFAVE
(Asociación Española de
Fabricantes de fachadas ligeras
y ventanas)

FEDIT
(Federación Española de
Entidades de Innovación
Tecnológica)

AETEP A
(Asociación Española de
Técnicos en pintura y afines)

Chair ref. "Global 170" was subjected to structural resistance tests according to Norm UNE 11010-89 at Test Level 5, achieving the following results.

TEST	RESULTS
Static load on seat (section 2.5.1)	SATISFACTORY
Static load on backrest (section 2.5.2)	SATISFACTORY
Lateral static load on armrests (section 2.5.3)	SATISFACTORY
Vertical static load on armrests (section 2.5.4)	SATISFACTORY
Fatigue on backrest (section 2.5.6)	SATISFACTORY
Static load on front legs (section 2.5.7)	SATISFACTORY
Lateral static load (section 2.5.8)	SATISFACTORY
Diagonal load on base (section 2.5.9)	SATISFACTORY
Impact on seat (section 2.5.10)	SATISFACTORY
Impact on Backrest (section 2.5.11)	SATISFACTORY
Floor impact test (section 2.5.13)	SATISFACTORY

Date: 25th January 1999

This document is not valid without the test report of identical number to the certificate, where the results obtained in each tests are stipulated.

The results obtained in these tests refer only to the tests carried out in this Test Centre on the date shown above and do not imply a constant characteristic in the quality of production.



**CENTRO DE
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TECNOLOGICA**

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TEST REPORT

CLIENT: ENEA EREDU, S.COOP.

PETITIONER'S NAME: IÑAKI ELIZEGI

**ADDRESS: APARTADO 97
20250 LEGORRETA**

TESTED MATERIAL: CHAIR WITH ARMRESTS REF. "GLOBAL 170"

PURPOSE OF PETITION: TEST ACCORDING TO NORM 11.010-1989

RECEPTION DATE: 16/11/98

DATE OF FIRST TEST: 25/11/98

DATE OF LAST TEST: 22/1/99

Total number of pages (including this page): 10

The test results refer only to the material received and tested in this Centre of Investigation on 16/11/98

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Asier Maiztegi
Furnishing Department Head

Jose M^a Irure
Analyst

Azpeitia, 25th January 1999



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TEST CHARACTERISTICS

On 16th November 1998, we received in CIDEMCO a chair with the following reference:

CHAIR WITH ARMRESTS “GLOBAL 170”

TESTS REQUESTED

The tests requested are those of structural resistance for chairs as stipulated in Norm. UNE 11.010-89 at the highest testing level.

TESTS CARRIED OUT AND RESULTS OBTAINED

The tests carried out are as follows, in the same order as they appear and on the same sample chair.

All the tests were carried out according to **Test Level 5**, which figures in appendix A of Norm UNE 11020:1992/2 as corresponding to “**severe public use**” (Furniture destined to be installed in places for general public access, mainly uncontrolled. The frequency of use of this type of furniture is very high and by large numbers of people of all types and ages. Due to its location, a specifically careless or even harsh treatment can be expected. As an example, the following locations can be mentioned: Furniture installed in public accesses to stations or similar places, bars or cafes located in stations, etc.)

As a result of the tests, there should be no breakage or cracks in any of the parts of the chair, nor should any of the parts become loose. The chair should not show damage of any kind.

In this particular case, the results are as follows:

1. STATIC LOAD TEST ON SEAT (UNE 11.010-89 section 2.5.1)

The test consists of 10 application of a vertical load of 1600 N on the weakest part of the seat.

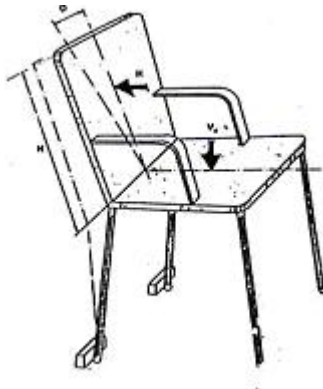


- Force applied on seat: **1600 N**
- No. of cycles: **10**

RESULTS: SATISFACTORY

2. STATIC LOAD TEST ON BACKREST (UNE 11.010 section 2.5.2)

The test consist of the application of a horizontal load (H) of 760 N combined with a counterweight load of 1600 N.



- Force applied on backrest (H): **760 N**
- Counterweight load (F_c): **1600 N**
- No. of cycles: **10**

RESULTS: SATISFACTORY

Client: ENEA EREDU
Ref.: "Global 170" Chair.



3. LATERAL STATIC LOAD TEST ON ARMRESTS (UNE 11.010-89 section 2.5.3)

The test consists of 10 applications of two simultaneous horizontal loads, in opposite directions and on its weakest point.

- Force applied on armrests (H): **900 N**
- No. of cycles: **10**



This test was carried out three times; the first on the 25th of November 1998, and the result was **UNSATISFACTORY**, as one of the armrests broke. (see photo)



In view of the unsatisfactory results, the client substituted the armrests for similar ones and asked for the tests to be repeated.



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The test was repeated on the 17th of December, with an **UNSATISFACTORY** result, as the armrest broke again. (see photo)



In view of the result, the client changed the armrests again, this time substituting them with armrests of a different material. According to the manufacturer's specifications, instead of polyamide 6 as in the previous version, the new ones were polyamide 6 with 25% glass.

On the 22nd of January, the tests were repeated with **SATISFACTORY** results.

4. VERTICAL STATIC LOAD TEST ON ARMRESTS (UNE 11.010-89 section 2.5.4)

The test consists of 10 applications of a vertical load on the weakest point of the armrest. A counterforce load is applied on the point shown in the diagram to prevent the chair from tipping.



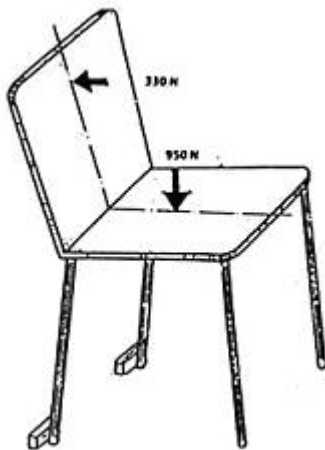
- Force applied on armrests (V): **900 N**
- No. of cycles: **10**

RESULTS: SATISFACTORY

Client: ENEA EREDU
Ref.: "Global 170" Chair.

FATIGUE TEST ON BACKREST (UNE 11.010-89 section 2.5.6)

The test consists of the application of a horizontal force (H) of 330 N on the load point of the backrest while maintaining a force on the seat of 950 N. This was carried out in 120.000 repetition cycles.



Force applied on backrest (H): **330 N**

Force applied on seat: **950 N**

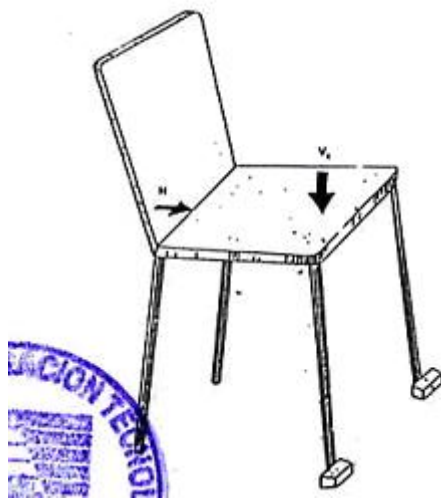
Cadence of tests: **28 cycles per minute**

No. of cycles: **120.000**

RESULTS: **SATISFACTORY**

6. STATIC LOAD TEST ON FRONT LEGS (UNE 11.010-89 section 2.5.7)

Once the chair has been secured by means of stoppers to prevent sliding, a horizontal load (H) of 750N and a counterweight (V_c) of 1600N is applied, carrying out 10 repetition cycles.



Force applied on legs (H): **760 N**

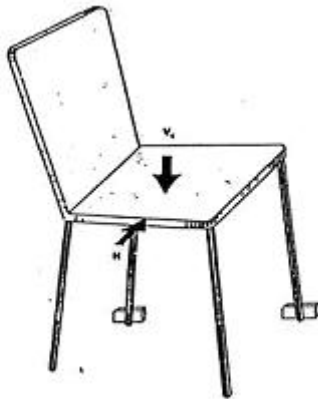
Force applied on seat: **1600 N**

No. of cycles: **10**

RESULTS: **SATISFACTORY**

7. LATERAL STATIC LOAD TEST (UNE 11.010-89 section 2.5.8)

Once the chair has been secured by means of stoppers to prevent sliding, a horizontal load (H) of 750N and a counterweight (Vc) of 1600N is applied, carrying out 10 repetition cycles



Force applied on legs (H): **760 N**

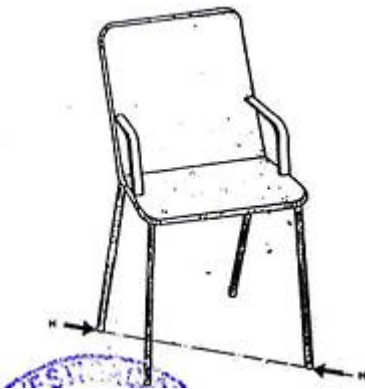
Force applied on seat: **1600 N**

No. of cycles: **10**

RESULTS: SATISFACTORY

8. DIAGONAL LOAD TEST ON BASE (UNE 11.010-89 section 2.5.9)

The test consists of two horizontal forces applied diagonally on the lowest possible part of the chair in opposite directions.



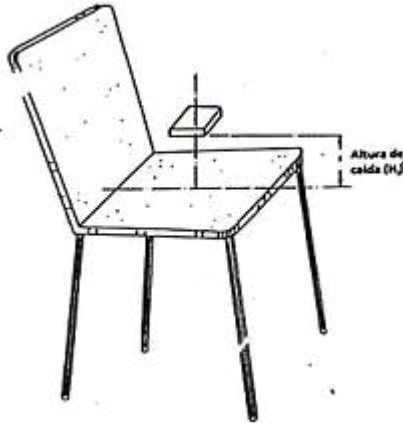
- Force applied (H): **620 N**
- No. of cycles: **10**

RESULTS: SATISFACTORY

Client: ENEA EREDU
Ref.: "Global 170" Chair.

9. IMPACT ON SEAT TEST (UNE 11.010-89 section 2.5.10)

The Test consists of allowing an impact force to drop 10 times on the seat from a height of 300mm (H_i).



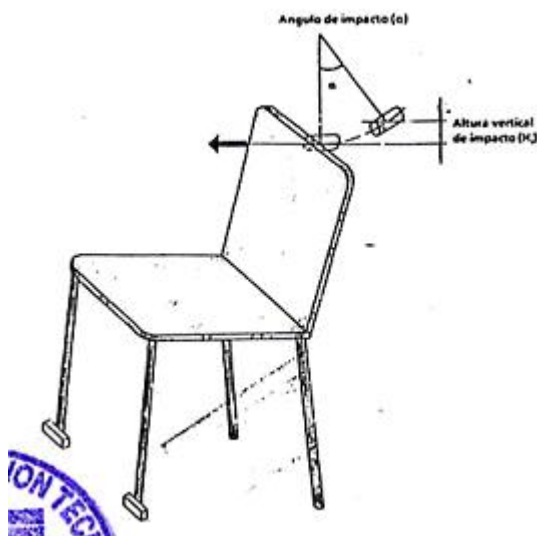
Height of impact force (H_i): **300 mm**

No. of impacts: **10 N**

RESULTS: SATISFACTORY

10. IMPACT ON BACKREST TEST

The test consists of applying impacts on the rear of the backrest of the chair with an impact hammer from a height of 330mm at an angle of 48°.



- Height of impact hammer's drop (H_i): **620mm**
- No. of impacts: **10**

RESULTS: SATISFACTORY

11. FLOOR IMPACT TEST (UNE 11.010-89 section 2.5.8)

The test consists of allowing the chair to fall from a height (H_c) on one leg, leaving a 10° angle with respect to the other leg situated on its same diagonal plane.



Impact height (H_c): **900mm**

No. of impacts: **10**

RESULTS: SATISFACTORY

Client: ENEA EREDU
Ref.: "Global 170" Chair.



SUMMARY OF RESULTS

- Norm UNE 11.010-89
- **Test level: 5 (Severe public use)**

TEST	TEST CHARACTERISTICS	RESULTS
Static load on seat (section 2.5.1)	F applied – 1600 N No. of cycles: 10	SATISFACTORY
Static load on backrest (section 2.5.2)	F applied – 760 N Counterweight F – 1600 N No. of cycles: 10	SATISFACTORY
Lateral static load on armrests (section 2.5.3)	F applied – 900 N No. of cycles: 10	SATISFACTORY
Vertical static load on armrests (section 2.5.4)	F applied – 330 N F on seat – 950 N	SATISFACTORY
Fatigue on backrest (section 2.5.6)	F on Backrest – 330 N F on seat – 950 N No. of cycles: 120.000	SATISFACTORY
Static load on front legs (section 2.5.7)	F applied - 760 N Balance F – 1600 N No. of cycles: 10	SATISFACTORY
Lateral static load (section 2.5.8)	F applied – 760 N Balance F – 1600 N No. of cycles: 10	SATISFACTORY
Diagonal load on base (section 2.5.9)	F applied – 620 N No. of cycles: 10	SATISFACTORY
Impact on seat (section 2.5.10)	Height of impact -.330mm No. of impacts: 10	SATISFACTORY
Impact on back (section 2.5.11)	Height of impacts – 620mm No. of impacts: 10	SATISFACTORY
Floor impact (section 2.5.13)	Height of impact – 900mm No. of impacts: 10	SATISFACTORY

Client: ENEA EREDU
Ref.: “Global 170” Chair.