Standard study (Modified)

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PURPOSE	Comparative study of UNE-EN 15373:2007, UNE-EN 13761:2003 and UNE-EN 16139:2013 standards
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*In case of a lawsuit, the original Spanish version of this document shall be taken as reference.

*This document modifies and cancels the document issued on the 30/01/2015. The reason for the modification is that a slip of the pen was found regarding EN 16139 reference and it has been corrected.

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PURPOSE

The company ENEA EREDU.S.COOP. requests TECNALIA to do a comparative study between UNE-EN 15373:2007 standard (withdrawn), UNE-EN 13761:2003 standard (withdrawn) and UNE-EN 16139:2013 (current).

PREMISES

The premise for this request is that the company ENEA EREDU S.COOP. carried out tests according to UNE-EN 15373:2007, now withdrawn, on the following chairs:

- Tests carried out (Level 3) on the four legged LOTTUS chairs, with armrests and with no armrests. The results of these tests are shown the test reports No. 24797 and 24798 with date of issue on the 27/04/2010.
- Tests carried out (Level 3) on the four-legged BIO chairs with armrests and with no armrests, and on the wheeled swiveling base BIO, with armrests. The results of these tests are shown the test reports No. 27799 and 17578 with date of issue on the 23/05/2011 and 15/05/2008, respectively.

Note: The stability tests in the test reports above mentioned remain out of the scope of this study, as they were carried out according to UNE-EN 1022:2005, current standard, in all the cases.

STANDARD STUDY

UNE-EN 16139:2013 standard was elaborated through the fusion of the following standards: UNE-EN 15373:2007 *Non-domestic chairs* and UNE-EN 13761:2003 *Visitor chairs*, which were both withdrawn and got substituted by the first.

All the requirements and specifications that UNE-EN 16139:2013 mentions, come from these two other standards; as mentioned previously, this standard is a product standard that gathers requirements which were differentiated in two different standards according to the final use of the chair (non-domestic or visitor chair) and now are all gathered upon a single final use, the non-domestic use. As in the previous two standards, in this one also, the test method standard to be applied is EN 1728, specifically, the EN 1728:2012 version.

The main changes are described as follows:

- Whereas UNE-EN 15373 distinguished 3 test levels depending on the severity of the intended use of the chair (Level 1,moderate use; Level 2, general use; and Level 3, severe use), in the new standard Level 1 does not exist anymore; therefore, the new standard has a level now called L1 (general use), equivalent with Level 2 of UNE-EN 15373 and equivalent with the test parameters and requirements of UNE-EN 13761 and on the other hand, a Level now called L2 (severe use) equivalent with the test parameters of Level 3 of UNE-EN 15373. (*see Table1*)

In the next table, the test parameters are shown as a summary of the above explained:

Comparative study of UNE-EN 15373 (3 Level) and UNE-EN 16139 (L2 level)

Tests carried out	Reference	Load [a]	UNE-EN 16139	UNE-EN 15373
			L2	Nivel 3
1. Seat and backrest static load	EN 1728:2012, 6.4	Seat: load, N Back: load, N 10 times	2000 700 (fuerza mín.,410)	2000 700
2. Front seat static load	EN 1728:2012, 6.5	Load, N 10 times	1600	2000
3. Vertical static load on backrest[b]	EN 1728:2012, 6.6	Load, N Seat load, N 10 times	900 1800	900 1800
5. Side static load on armrests	EN 1728:2012, 6.10	Load, N 10 times	900	900
6. Downwards static load on armrests	EN 1728:2012, 6.11	Load, N 5 times	900	1000
7. Upwards static load on armrests	EN 1728:2012, 6.13.1, 6.13.2	Seat load, N Lift 10 times Duration ≥ 10 s	1200	1200 or lifting of pile
8. Seat and back durability	EN 1728:2012, 6.17	Cycles: Seat: 1000 N Back[c]: 300 N	200 000	200 000
9. Front seat durability	EN 1728:2012, 6.18	Cycles: Load: 800 N	100 000	100 000
10. Armrest durability	EN 1728:2012, 6.20	Cycles: Load: 400 N	60 000	100 000

Tests carried out	Reference	Load [a]	UNE-EN 16139	UNE-EN 15373
			L2	Nivel 3
12. Front static load on legs	EN 1728:2012, 6.15	Load, N Seat load, N 10 times	620 1000	620 1800
13. Side static load on legs	EN 1728:2012, 6.16	Load, N Seat load, N 10 times	760 1800	760 1800
14. Seat impact	EN 1728:2012, 6.24	Drop height, mm 10 times	300	300
15. Backrest impact	EN 1728:2012, 6.25	Drop height, mm/º 10 times	330/48	620/68
16. Armrest impact	EN 1728:2012, 6.26	Drop height, mm/º 10 times	330/48	620/68
17. Drop test (multiple seats)	EN 1728:2012, 6.27.1	Drop height, mm 2 × 5 times	450	450

[a] Load on the seats not being tested: 750 N.
[b] The test only applies to chairs without neck/headrest and to chairs with a backrest height < 1000 mm, above the ground level.
[c] Minimum force is not defined.

Table 1

CONCLUSION

The tests carried out on the LOTTUS series chairs (reports No. 24797 and 24798) and on the BIO series chairs (reports No. 27799 and 17578) according to UNE-EN 15373:2007 (Level 3), being their results Satisfactory, exceed in all cases the load magnitudes and No. of cycles required in UNE-EN 16139:2013 (Level L2).