

Storage furniture for non-domestic use: new version of EN 16121 published

Maurizio Marussi

January 2024

In December 2023, the new EN 16121 was published to replace EN 16121:2013+A1:2017, a standard that defines the requirements for safety, strength, durability and stability of furniture for non-domestic use. The most important change is that this standard also applies to office furniture, thus replacing the dated EN 14073-2 and consequently EN 14073-3 and 14074.

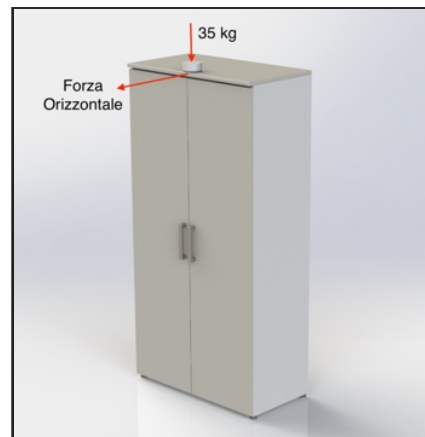
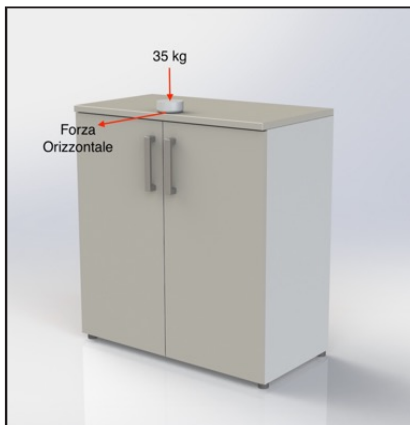
Main changes and technical novelties

New methods and references have been added for the assessment of safety requirements and for the assessment of entrapment and crushing of fingers during the use of furniture.

Two levels, general and severe, have been added to calculate the total mass, the figure to be used for verifying the applicability of safety tests.

Stability tests:

The horizontal overturning force is changed from 50 N to 50 N/m; thus, the force is no longer a fixed value but is a function of the height of the furniture, below are two examples:



Example horizontal tip-over force F applied on a cabinet 1100 mm high

EN 16121:2013	EN 16121:2023
F = 50 N	F = 45 N (50 N/m)

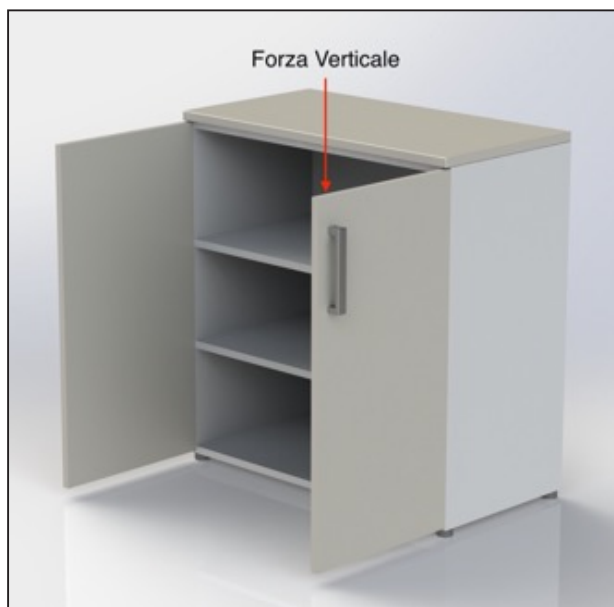
Example horizontal tip-over force F applied on a cabinet 2000 mm high

EN 16121:2013	EN 16121:2023
F = 50 N	F = 25 N (50 N/m)

Storage furniture for non-domestic use: new version of EN 16121 published

Maurizio Marussi

The vertical tipping force is reduced from 100 N to 75 N, as shown below:



Example of vertical tip-over force F applied to a cabinet door	
EN 16121:2013	EN 16121:2023
F = 100 N	F = 75 N

Safety tests:

The following changes have been made compared to the previous standard:

- Static load test on top: the load is increased from 750 N to 1000 N
- Testing of shelf supports: a unit load of 1.0 kg/dm² and impact mass type 2 for office, library and barracks use has been established.

For the other tests, the loads and cycles were not changed.

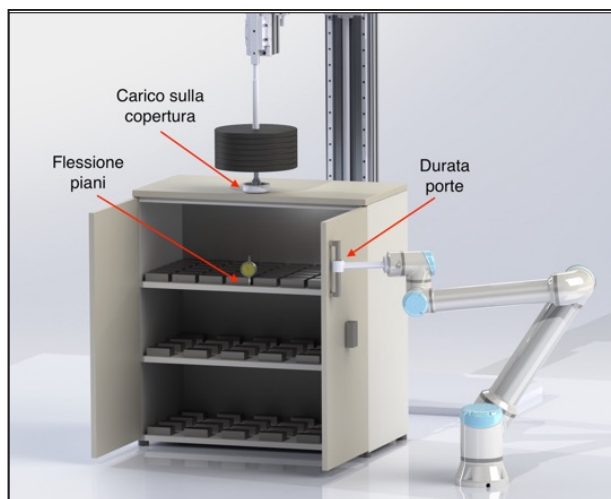
Resistance and Durability Tests:

The two levels, General (1) and Severe (2), were maintained with the following changes:

- Durability test of doors on a vertical axis: the second level was changed from 80,000 to 50,000 cycles.
- Opening and closing test with impact of sliding doors: the impact mass has been reduced from 4 to 3 kg for the first level, from 6 to 4 kg for the second level.
- Durability test of drawers: the second level has been changed from 80,000 to 50,000 cycles.
- Durability test of pull-out trays: the second level has been decreased from 40,000 to 25,000 cycles.
- Deflection test of shelves: the nominal load of the first level has been reduced from 1.5 to 1.0 kg/dm², for the second level it increased from 2.0 to 1.5 kg/dm².

Storage furniture for non-domestic use: new version of EN 16121 published

Maurizio Marussi



Comparative table of loads and cycles between EN 16121:2013 and version 2023

Test	EN 16121:2013	EN 16121:2023
Load on the top	Load 750 N	Load 1000 N
Shelves deflection	Level 1: 1,5 kg/dm ² Level 2: 2,0 kg/dm ²	Level 1: 1,0 kg/dm ² Level 2: 1,5 kg/dm ²
Durability of doors	Level 2: 80.000 cycles	Level 2: 50.000 cycles
Opening/closing sliding doors	Level 1: impact mass 4kg Level 2: impact mass 6kg	Level 1: impact mass 3kg Level 2: impact mass 4kg
Durability of Drawers	Level 2: 80.000 cycles	Level 2: 50.000 cycles
Durability of Trays	Level 2: 40.000 cycles	Level 2: 25.000 cycles

Test levels:

The correlation between the test level and the intended use of the furniture, even if at an informational level, includes the following:

Test level	Intended use
1 - General	hotels, homes for the elderly, kindergarten, reception areas, meeting rooms, lounge areas, restaurants, laboratory furniture
2 - Severe	barracks, schools, universities, offices, libraries.

For info:

Maurizio Marussi
+39 0432 747225
marussi@catas.com

All rights reserved

Reproduction or duplication of the contents of this article is authorized under condition that the source is being cited- © CATAS - San Giovanni al Natisone - Udine - Italy