

NF D60-300-3

February 2008

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Furniture for young children

Part 3: Security requirements and test methods for interior and exterior tables

E : Furniture for young children — Part 3: Safety requirements
and test methods for indoor and outdoor tables

D : Möbel für Kleinkinder — Teil 3: Sicherheitstechnische Anforderungen
und Prüfverfahren für Innen- und Außentische

Ratified French Standard

by decision of the Director General of AFNOR on January 9th 2008 with effect
February 9th 2008.

With parts 1 and 2, of February 2008, replaces the ratified standard
NF D 60-304 of January 1949.

Correspondence

At the date of publication of this document, there exist no international or European
works treating the same subject.

Analysis

This document prescribes the security requirements and corresponding test methods
for tables for domestic interior and exterior use, and of which the height of the upper
surface of the table is lower than 600 mm, and which is designed to be used by young
children.

Descriptors

International Technical Thesaurus: furniture, furniture for children, material for
domestic use, interior, exterior, table, requirement, safety, prevention of accidents, test
conditions, test, dimension, mechanical resistance, static test, static charge, fatigue test,
solidity, drop test, stability test, dimension.

Modifications

With respect to document replaced, complete revision of the standard.

Corrections



Furniture for children

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Contents

Page

Foreword	4
1 Area of application	4
2 Normative References	4
3 Terms and definitions	4
4 Test Conditions	5
4.1 General	5
4.2 Preliminary preparation	5
4.3 Application of forces	5
4.4 Tolerance	5
5 Testing equipment	6
5.1 Device for the application of the vertical force	6
5.2 Device for the application of horizontal forces	6
5.3 Local bearing shoe	6
5.4 Test floor	6
5.5 Stop wedges	6
5.6 Foam for contact surfaces of weight bearing shoes	6
5.7 Spring-equipped impactor	6
6 Safety requirements	7
6.1 General safety requirements	7
6.2 Mechanical resistance and stability	7
6.2.1 General	7
6.2.2 Static vertical charge test	8
6.2.3 Horizontal fatigue test	8
6.2.4 Vertical impact test	10
6.2.5 Test for stability	10
6.2.6 Requirements	10
7 Testing report	10

Foreword

The products to which this document applies must meet regulations currently in effect.

1 Area of application

This document prescribes the security requirements and corresponding test methods for tables for domestic interior and exterior use, and of which the height of the upper surface of the table is lower than 600 mm, and which is designed to be used by young children.

Childcare articles relating to decree No. 91-1292 are excluded.

Also exclude are toys relating to Directive 88/378/CEE.

Inflatable products are excluded.

Ageing and degradations related to ageing are not taken into consideration; similarly for the durability of materials, finishes and mechanisms for storage and folding.

The evaluation of ageing linked to climatic variation is not taken into consideration, regardless of the materials used.

2 Normative references

The following reference documents are indispensable for the application of this document. For dated references, only the cited edition applies. For undated references, the latest edition of the reference document applies (including any amendments).

NF D 60-300-1, *Furniture for young children — General safety requirements for furniture intended for young children.*

NF EN ISO 2439, *Supple alveolar polymer materials — Determination of hardness (indentation technique).*

3 Terms and definitions

Throughout this document, the following terms and definitions apply.

3.1

static test

test consisting of the application of heavy weights, a small number of times, to ensure the furniture is sufficiently strong under charge levels higher than those one can reasonably expect

3.2

fatigue test

test simulating the repeated application of weights or the movement of components arising during one functional use of long duration

3.3

structure

Any part of a piece of furniture bearing weight, including the frame, the upper surface and the frames

3.4

stability

aptitude to withstand forces tending to tip the furnishing

4 Test Conditions

4.1 General

The tests are designed to be applied to the completely assembled furnishing when ready for use.

The results are valid only for the article submitted to testing. When the results are intended to be applied to other similar articles, the sample must be representative of the model tested.

In the case where, due to the article's design, the test methods are not directly applicable, tests are to be effected in as close a way possible to the effects described and any deviation is to be noted in the test report.

All tests are not necessarily applied to all types of table.

4.2 Preliminary preparation

Before proceeding with the first planned test, the article must be sufficiently stabilised to ensure it has developed its full resistance.

The product must be tested as delivered. If it is a product to be assembled, it must be assembled (scrupulously) according to its enclosed assembly instructions. If the product can be assembled or set up in various manners, the most unfavourable must be used for testing. The assembly devices of ready to assemble products must be tightened before the beginning of the tests. No further tightening must be done during testing, unless it is specifically required and mentioned by the manufacturer.

The test sample must be stored at interior room temperature for at least one week immediately before the test. Any deviation from this procedure must be noted in the test report.

The tests must be performed under normal room temperature & conditions, but if during a test, the temperature is outside the 15 to 25 °C fork, this low/high temperature must be noted in the test report.

4.3 Application of forces

For test of durability and static weight, the forces must be applied sufficiently slowly to ensure that dynamic effects are negligible. For fatigue tests, the forces must be applied sufficiently gradually to avoid any kinetic heating.

Unless otherwise indicated, static weights must be maintained for (10 ± 2) seconds and the weights for the fatigue tests for (2 ± 1) seconds.

4.4 Tolerance

Unless otherwise specified, take into consideration the following tolerances:

- all forces applied must have a precision of ± 5 % with respect to the nominal force;
- all masses applied must have a precision of ± 0.5 % with respect to the nominal masses;
- all dimensions must have a precision of ± 2 mm with respect to the nominal measurement;
- all angles must have a precision of $\pm 2^\circ$.

The tolerance for the positioning of weight-bearing shoes must be ± 5 mm.

5 Test Equipment

5.1 Device for the application of the vertical force

Device allowing the application of either the given vertical force, or a vertical force which can be increased gradually. This device must not impede movement of the product. The force must be applied in a uniform fashion on the product using a local weight bearing shoe (5.3).

5.2 Device for the application of horizontal forces

Device allowing the application of gradually increasing horizontal forces. This device must not impede movement of the product. The forces must be applied in a uniform fashion on the product using a local weight bearing shoe (5.3).

5.3 Local weight-bearing shoe

A rigid cylindrical object of 100 mm in diameter having a flat surface and whose peripheral edge has a radius of 12 mm.

5.4 Test Floor

A hard, smooth horizontal surface.

5.5 Stopper pegs

These are designed to prevent the seat from sliding but not from tipping. Their height is less than or equal to 12 mm except in cases where the product design requires the use of taller pegs; in such cases, choose the height which is just enough to prevent the part from moving.

5.6 Foam for contact surfaces between shoes and weight

A 25 mm layer of foam, hardness index $1\ 100 \pm 300$ N in accordance with NF EN ISO 2439 method A 40.

5.7 Spring loaded vertical impactor

The vertical spring impactor is shown in Figure 1.

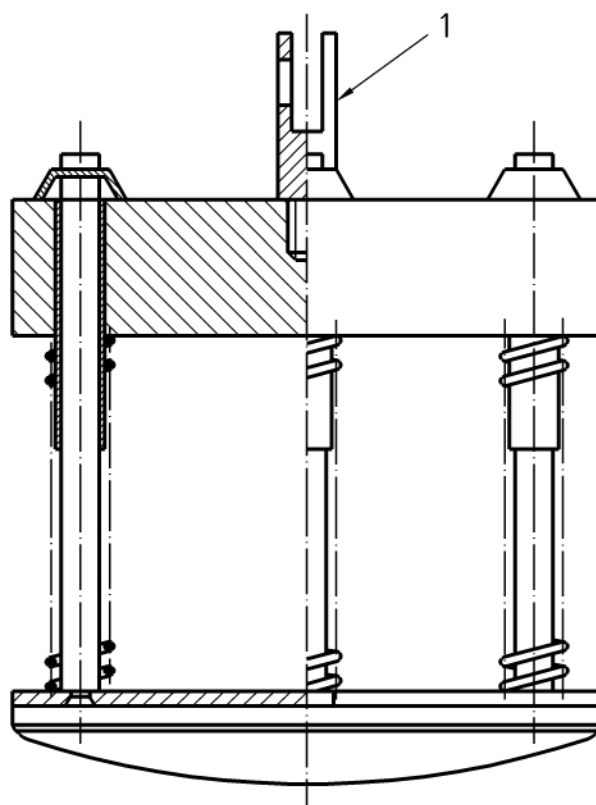
It is composed of a circular body 200 mm in diameter separated from the striking surface by springs in helix shape, under compression, and free to move with respect to itself in a direction perpendicular to the plane of the central area of the striking surface.

The circular body and the associated parts (less the springs) must have a mass of (17 ± 0.1) and the whole apparatus, including the mass, the springs and the striking surface must have a mass of (25 ± 0.1) kg.

The springs must be such that the system has a nominal degree of elasticity of (6.9 ± 1) N/mm and the total resistance to friction in the mobile parts must be between 0.25 N and 0.45 N.

The initial compression of the whole set of springs must be $(1\ 040 \pm 5)$ N (measured statically) and the course of compression of the springs which is possible from the point of initial compression to the point the springs make contact must not be less than 60 mm.

The striking surface must be a rigid circular object of 200 mm in diameter, whose surface is constituted by a spherical section of a radius of 300 mm and whose peripheral edge has a radius of 12 mm.



Legend

- 1 Joint of elevation system does not inhibit freefall

Figure 1 — Impactor with springs

6 Safety Requirements

6.1 General Safety Requirements

The tables must satisfy the general safety requirements of the standard NF D 60-300-1.

6.2 Mechanical resistance and stability

4.1 General

In cases where the design of the article does not allow the application of the test methods described, the test must be done in the closest manner possible and the variance with respect to the methods described must be detailed in the test report.

A layer of foam (5.6) must be placed between the bearing shoes and the structure to be tested. The tests are done in the order in which they are presented below.

In cases where the table appears unstable, the stability test may be performed before the other tests.

6.2.2 Static vertical weight test

On the table, in its normal usage position, apply a downward vertical force of 600 N over 10 cycles of 30 seconds each using the weight bearing shoe (5.3), on the surface of the table in a location deemed the most unfavourable, but never less than 100 mm from the edge. If there are several unfavourable spots, repeat the test on these areas.

Repeat the test on auxiliary surfaces with a force of 200 N. If the table has a tendency to tip, weight down the main surface to prevent any tipping.

6.2.3 Horizontal fatigue test

Place the table on the test floor in its normal usage position, feet against the stopping wedges (5.5), to avoid the sliding of the table but not preventing its oscillation.

Weigh down the table's surface, at its geometric centre, in such a way that under the force, it remains perfectly horizontal and does not tip, but without exceeding 40 kg.

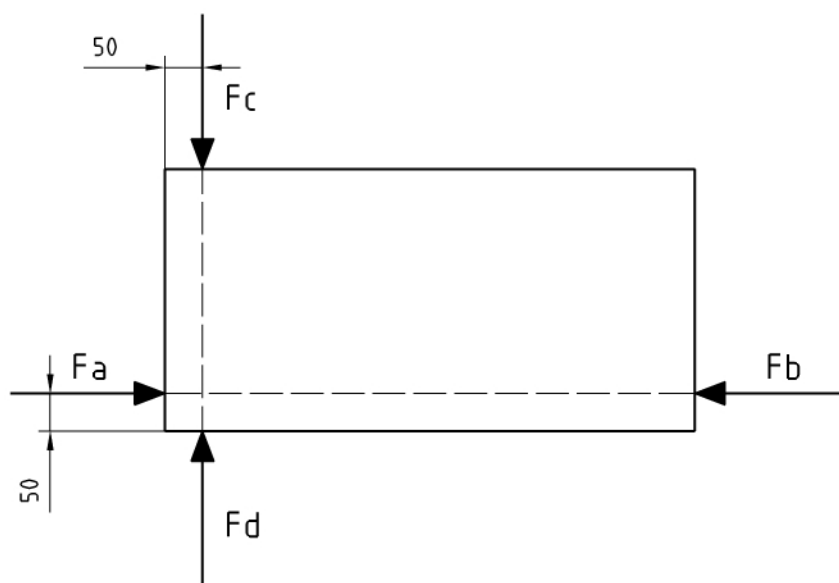
Alternately and successively in the order a, b, c, d, apply by means of the application device a series of horizontal forces (5.2), a perpendicular and horizontal force at the edge of the top surface, equal to $F = 100$ N, at the point specified in Figure 2.

Perform 5 000 cycles, each cycle being decomposed as follows $F(a) + F(b) + F(c) + F(d)$ at a frequency of 4 cycles per minute.

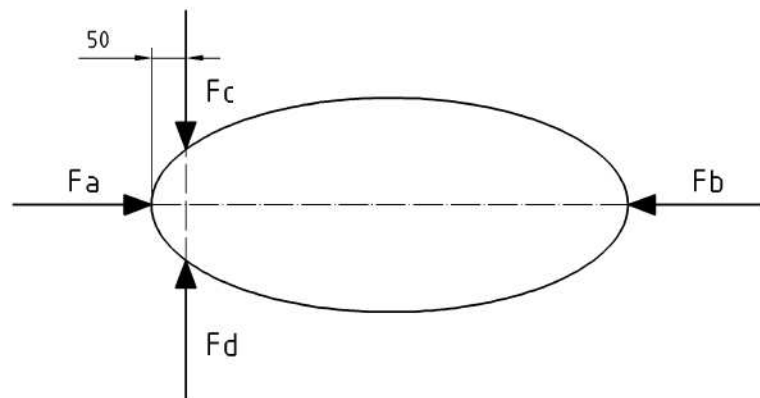
If the table has a tendency to tip under a surface charge of 40 kg, the force is reduced only in the direction of the tipping, down as far as the tipping limit force. In this case the value of the force applied must be recorded in the test report.

NOTE This test can be broken down into 2 phases: n cycles in the transversal direction and n cycles in the longitudinal. Under these conditions, the frequency must be doubled.

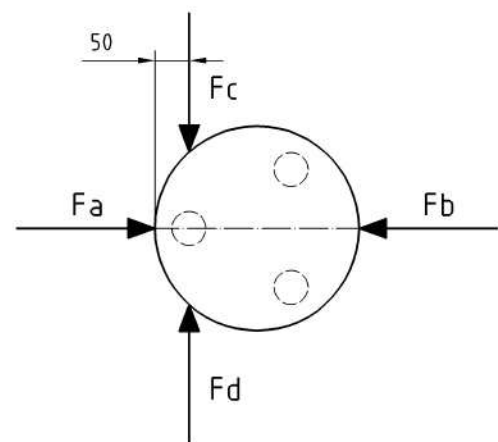
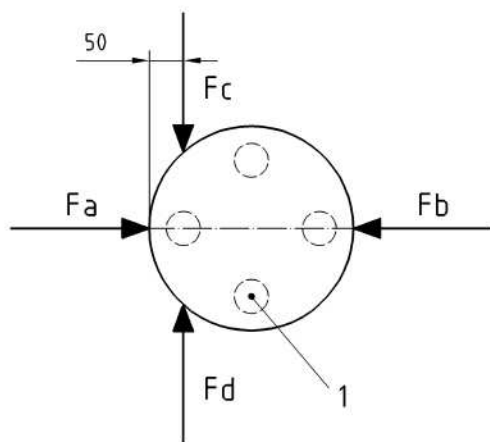
Dimensions in millimetres



a) Example: Square or rectangular tables

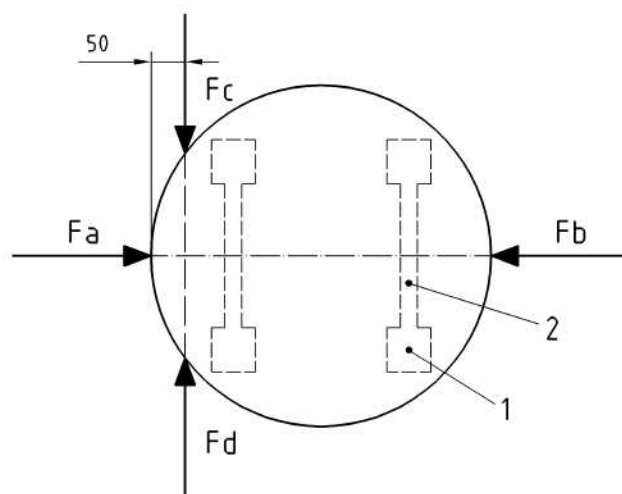


b) Example: Round or oval tables

**Legend**

1 Foot

b) Example: Round table with 3 or 4 feet

**Legend**

1 Feet

2 Rails

a) Example: Round table with 4 feet linked two to two

Figure 2 — Horizontal fatigue test

6.2.3 Vertical impact test

Place a layer of foam (5.6) on the table surface.

Determine the falling height of the impact body from the position of the impactor in contact with, and resting upon, this layer of foam (5.6).

Place a second layer of foam (5.6) between the striking surface and the top surface of the table.

Allow the freefall of the spring impactor (5.7) from a drop height of 100 mm onto the surface at a point deemed the most unfavourable but no nearer than 100 mm from the edge.

Repeat this test 10 times. Repeat it also in any other position likely to cause damage.

6.2.5 Stability test

If the table has drawers, they must be empty during the test.

Measure the table's top surface in its longer dimension (L).

Apply, using the weight application shoe (5.3) a vertical charge F as defined below:

— If $L \leq 800$ mm then $F = 200$ N.

— If $800 < L \leq 1\,600$ mm then $F = 200 \cdot (L/800)$ N L in mm.

— If $L > 1\,600$ then $F = 400$ N.

The force must be applied at 50 mm from the front edge of the table at any point likely to provoke its tipping.

6.2.6 Requirements

After the tests, the table must retain its functionality and no degradation which might compromise the safety of the user must be observed.

During the stability test, the table must not tip or overturn.

7 testing report

The test report must contain the following information:

- reference to this document;
- description of the product tested;
- results of the tests;
- details on any departure with respect to this document;
- name and address of the test organisation;
- date of the test.