

## Children and furniture: a challenge on safety to win

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**T**here is no doubt that we live in a time when in Europe (in the broadest sense of the word) great emphasis and attention is given to the categories of people who have fewer defenses such as the elderly and children.

In the case of children this is evident both at the legislative and standardization level.

Among the many areas and objects with which the child comes into contact during his first years of life, the furniture is unquestionably of primary importance. This for many reasons, both for its pervasiveness in our homes (and not only) and for the complex interaction between the person (children and not) and the furniture precisely. The biomechanics of this interaction has been under consideration for thirty years and what has been consolidated so far has translated, for the most part, into the test methods standards of which we will discuss this article.

To give an idea of how complex the topic is we find that already in the definition of children. In various documents that can be found in the various regulatory areas (European and non-European) there are different intervals or age limits.

For example, CPSC (Consumer Product Safety Commission, USA) in its accident statistics sets the limit of 17 years, in Europe in some cases the distinction becomes finer (eg children, toddler) and the age limit is set at 14.

What is almost certain is that the completion of physical and cognitive skills / sensibilities ends no earlier than eight years. This physiological reality poses and has paid great attention to the possible risks in which children can incur and consequently also to the test methods and the requirements of the furniture elements involved.

However, we think it useful to briefly recall the ten most common children's domestic accidents

1. Fall of objects. Children can get all those objects at their reach. Electric cables, tablecloth edges, tea towels should be kept out of their reach
2. Falls. They are more common among children and the elderly.
3. Bruises. Any fall can lead to bruising which can be very painful.
4. Distortions. Knees, ankles and wrists are the most affected parts of the body.
5. Cuts.
6. Burns.



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7. Choking. Children love to put everything in their mouth, but risk ingesting small objects.
8. Poisoning. In most cases it is caused by medicines, household products and cosmetics left lying around.
9. Broken glass injuries. They can cause very serious cuts
10. Drowning. Children can drown even in shallow water.

From the above we can understand quite easily where and when furniture can become a source of risk for children. If we look carefully at some statistics we have a clear view of the extent of the problem. As an example we report the following two tables.

N ° incidents	Fatality	Non-fatal	Incidents without injuries
3520	147	1675	1698

**Data from the USA (2007 to 2010) related to cots**

24% of fatal cases were due to structural problems such as entrapment of the head / neck: 18 cases due to defects of the movable side; one case of entrapment between the wall and the bed.

Moving on to another scenario, the sadly famous one of the overturning of the cabinets, again from the USA statistics (CPSC) we get the following:

N ° incidents	% (age <18 years)	% (age ≥ 18 and ≤ 59 years)	% (age ≥ 60 years)
38900	56	37	7

**Data from the USA (from 2006 to 2008) related to the overturning of cabinets**

Even the most recent data show a similar scheme as can be seen from the following table:

N ° incidents	% (age <17 years)	% (age ≥ 18 and ≤ 59 years)	% (age ≥ 60 years)
28300	50	37	13

**Data from the USA (from 2015 to 2017) related to the overturning of the cabinets, TV and appliances**

The function of the data presented here is to give quantitative depth to the question we are facing.

Within Europe, the RAPEX system for the notification of dangerous consumer products (and the consequent countermeasures adopted by the supervisory bodies in charge) is a significant source of insights into the perception and management of the safety of furniture in the broad sense and of that for the children in particular. We underline that every week the Rapex website publishes products (with name of the product and company involved)) notified as dangerous by EU Countries.

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The data relating to year 2018 are very interesting. Out of about 2000 cases recorded during the year, only 21 cases are furniture related, corresponding to about 1%. This percentage incidence has remained almost constant in recent years.

Of the reported cases, 86% relates to children furniture. This gives immediate importance to the attention given to these products by the countries of the European Union.

For clarity of exposition we report in the following table the different cases by type of furniture.

Type of furniture	N ° of cases reported	Risk / non-conformity detected
Bunk beds	7	Non-compliance with EN 747
Cots	5	Non-compliance with EN 716
High chairs	3	Non-compliance with the EN 14988
Changing units	2	Non-compliance with EN 12221
Playpens	1	Non-compliance with EN 12227
Tables	3	Non-compliance with EN 581 / EN 12521
<b>Total</b>	<b>21</b>	

First of all we must note that, in 2018 data, no incidents were recorded. This is important and perhaps is a signal of the real effectiveness of the European incidents prevention system.

In all cases the non-conformities found concern the non-compliance with the safety requirements of the relevant European Standards. This is very important as a fundamental role is recognized to technical standards (in this case those of children furniture) regardless of the scheme of harmonized standards (see vertical product guidelines).

It is the opinion of the writer, that beyond the perfectibility of the standards, the enormous work done in these 30 years at CEN level on the standards for children furniture is of very high absolute technical content and they (EN standards) are indispensable in identifying the risks that potentially the furniture can bring and in their scientific quantification that we remember is the fundamental step for their reduction.

This aspect (risk reduction / elimination) is particularly important in the light of the Product Safety Directive (2001/95 / EC) implemented in Italy within the Consumer Code (Legislative Decree 6 September 2005, n. 206.)

We recall that the aforementioned directive requires the manufacturer to place only safe products on the market. Important definition of a safe product:

*“safe product” shall mean any product which, under normal or reasonably foreseeable conditions of use including duration and, where applicable, putting into service, installation and maintenance requirements, does not present any risk or only the minimum risks compatible with the product’s use, considered to be acceptable and consi-*

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*stent with a high level of protection for the safety and health of persons ... ..”*

Paragraph 3a of Article 3 (safety assessment) clearly refers to voluntary technical standards:

*“In circumstances other than those referred to in paragraph 2, the conformity of a product to the general safety requirement shall be assessed by taking into account the following elements in particular, where they exist:*

*(a) voluntary national standards transposing relevant European standards other than those referred to in paragraph 2; ... ..”*

Even the non-specific furniture for children, such as for example furniture for domestic use, is ruled by a very important voluntary standard, EN 14749, which in the stability requirements verifies a very common interaction scenarios in our homes. In non domestic areas, EN 16121, has a normative annex for cabinets in nursery schools with additional requirements dedicated to the intended use.

We have therefore seen briefly the “industrial” scope of the standards that involve children in the areas where they grow up. The value of these technical standards beside making these environments safe for the risks covered are an extraordinary (maybe unique) tool for defending the product by the industrial sector involved.

Using them, also helping to make it more and more appropriate to a reality in continuous and rapid change, is one of the solid indicators of an attitude that demonstrates the indispensable attention to safety and keeping the competitiveness of companies.

Out of this approach runs the serious risk of walking in the dark.



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