



**MANDATE IN THE FIELD OF STANDARDISATION TO CEN-CENELEC-  
ETSI RELATIVE TO THE SAFETY OF CONSUMERS**

**BUNK BEDS**

**Introduction**

At the meetings of Committee 83/189 on 16 February and 26 April 1995, the Danish authorities drew attention to the fact that European standard EN 747 "Bunk beds for domestic use" is incomplete.

At present, bunk beds are designed so that the feet of the bed slope outwardly from the frame: the distance between the upper rail and the projection of the outer part of the foot at floor level is in general 80 mm.

This means that there is a risk that children of small stature may fall between the bed and the wall, when the bed is placed alongside the wall. This may have serious and even fatal consequences. An accident of this kind was reported recently in Denmark and almost resulted in the child's death.

Other reasons for choosing bunk beds as the subject of the first specific intervention in the context of the mandate in the field of standardisation to CEN-CENELEC-ETSI relative to the safety of consumers include the data collected under the Community system of information on home and leisure accidents (the EHLASS system), the rapid exchange of information system under Directive 92/59/EEC of 29 June 1992 on general product safety, the notification of national technical standards and regulations under Directive 83/189/EEC, and comparative studies conducted by consumer associations.

**1 Identification of the risks**

Accidents resulting from falling from the upper part of a bunk bed almost always involve children and are responsible for very many cranial injuries.

Most victims are children between five and ten years of age ( $\pm 40\%$ ).

Accidents happen either because the child falls while sleeping (in 30% of the cases), or - more likely - while playing (45% of accidents occur during play).

The accidents habitually occur in a room but most important are the surrounds of the bed, which are often responsible for lesions (for example, the child falls and injures himself against a radiator or bedside table).

The injuries are far from trivial: 60% contusions have been recorded (mostly to the skull) and 15% open wounds. A large majority of these injuries involve the skull (44%) and face (11%). Moreover, injuries to the shoulder (18%) and clavicle have also been observed.

The hospitalisation rate (30%) for this kind of accident is very high compared to the average in the EHLASS survey (17%) and is even higher for the one-to-five year-olds (35% hospitalisation). However in most cases only an initial examination is carried out, without later treatment (for example, surveillance of cranial injury in the child).

## **2 National rules**

Only one French draft decree concerning safety requirements for bunk beds (Notification 94/298/F) has been notified in the context of Directive 83/189/EEC of 28 March 1983 laying down a procedure for the provision of information in the field of technical standards and regulations.

This draft provides that bunk beds placed on the market in France must satisfy certain safety requirements and be marked "Satisfies the safety requirements".

This marking may be affixed only if the bunk bed satisfies one of the following two conditions:

- it must have been manufactured in conformity with the French safety standards or foreign standards recognised as being equivalent or;
- it must be in conformity with a model that has a certificate of compliance with the safety requirements, issued after a type examination by a recognised body.

The French authorities, following observations made by certain Member States and the European Commission, have explained that two draft national standards are under study in relation to bunk beds in which the upper surface of the bed base is between 600 and 800 mm (and not 800 mm or more as in standard EN 747), as well as for mezzanine furniture.

Moreover the essential safety requirements in this draft decree apply in normal and reasonably foreseeable conditions. Hence the use of a bunk bed for play is normal or reasonably foreseeable when the bed is designed to permit such an activity.

## **3 Notifications received in the context of Directive 92/59/EEC**

In 1987, the German authorities drew the Commission's attention to the existence of a serious and immediate risk involving a high bed combined with a slide.

This notification concerned accessories to the bunk bed (in this case the slide) and not the structure of the beds as such. The danger invoked was the risk of falling from the slide and hitting the floor too fast.

The fastenings were not sufficient to prevent falls and the slide had defects pertaining to the ladder, chute width, and the sides; there were no safety arrangements to soften falls from the slide.

## **4 Studies**

Comparative studies by consumer associations concerning dangers linked to the use of bunk beds emphasise that many accidents result from faulty assembly.

Most bunk beds are supplied as a kit and assembled by the parents. These beds have to be designed so that anybody can assemble them and disassemble them correctly without excessive difficulty and with an optimum degree of safety.

Hence clear and detailed assembly instructions, i.e. accompanied by drawings and showing the assembly sequence, are crucial for user safety.

Moreover, the possibility of adjusting the height of the barriers on a bed to be assembled at home is a potential accident hazard (because of the absent of markings) if the user is not perfectly familiar with the precise assembly arrangements and usage precautions. Hence the fact that the height of the safety barriers can be adjusted and that they can be set at inappropriate positions was responsible for a fatal accident in France in April 1994.

## **5 Standardisation work**

Standard EN 747, published in 1993, lays down the safety requirements for bunk beds for domestic use, but only the sleeping function is taken into account.

It lays down safety specifications concerning materials, top bed safety barriers, gaps, bed base, ladder, strength of frame and fastenings, stability and fastening of the upper bed to the lower bed, as well as instructions for use and marking.

## **6 Conclusions**

The information at the European Commission's disposal concerning accidents linked to the use of bunk beds shows that such accidents are frequent and have severe consequences.

This real problem can be addressed in two ways:

- by sensitising the public to the intrinsic hazards of such beds, through information campaigns;
- but also by revising standard EN 747, because certain features were not taken into consideration when it was drafted.
  1. The Danish delegation's request relating to a minimum distance between the upper rail and the projection of the outer part of the foot of the bed at floor level, which was supported by the other national delegations at the meeting of 26 April 1995, should be taken into account when revising standard EN 747.
  2. Sites for mounting the safety barriers must be foreseen so that when a bunk bed is taken apart and reassembled it is impossible to adjust the height of these barriers.
  3. The growing demand for bunk beds has led manufacturers to market bunk beds that are more appealing to children by combining them with such attractions as slides, netball or basketball hoops, etc.

Standard EN 747 only takes the sleeping function into account and it would be necessary to integrate the play function when the bed is designed to allow such activity.

4. Standard EN 747 mandates the provision of assembly instructions together with the beds. However, it is vital to spell out these instructions in detail, by providing drawings and numbering the assembly steps in sequence.

A warning should also be enclosed concerning the surrounds of the bed so that parents' attention can be drawn to the dangers linked to the proximity of radiators and objects with protruding edges.

Moreover when the bed is sold without mattress an instruction must be enclosed indicating that the buyer should fit a mattress that does not exceed the permitted dimensions.

5. Seeing that - in order to save dwelling space - more and more people are buying bunk beds and mezzanine beds, it would be advisable to take into account mezzanine beds, which give rise to the same problems as bunk beds, in the context of applying standard EN 747.

Having regard to the mandate in the field of standardisation relative to the safety of consumers, the European Commission invites the European standardisation bodies

(CEN, CENELEC and ETSI) to indicate whether they intend to give favourable consideration to the questions raised in this working document.

-----

### **Bibliographical references:**

1. Accidents caused by bunk beds, EHLASS results, France, 1986/1989
2. Opinion of the *Commission de sécurité des consommateurs* (CSC) concerning a high bed, 1994.
3. Opinion of the CSC on bunk beds and mezzanine beds, May 1990.
4. Directive 83/189/EEC: Notification No 94/298/F on bunk beds.
5. Directive 92/59/EEC - rapid exchange of information system: Notification No 5/87/D on a bunk bed combined with slide.
6. Standard EN 747, 1993, on bunk beds for domestic use.
7. Request by the Danish delegation for revision of standard EN 747 on bunk beds for domestic use. (Letter of February 1995).
8. ISO Guide No 50, 1987: Child safety and standards - General guidelines
9. *Que choisir*, October 1989: *Lits superposés, ne mettez pas vos enfants en danger*