FURNTECHNICAL BULLETIN No. 3

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Cots and Bunks

This bulletin covers a number of issues relating to children's household cots and bunk beds, both of which are furniture items covered by Regulations issued under the Trade Practices Act of 1974.

Background

Both these Regulations:

- *Commonwealth Consumer Protection Notice Number 10 of 2003 Consumer Product Safety Standard: Children's household cots*, and
- *Commonwealth Consumer Protection Notice Number 1 of 2003 Consumer Product Safety Standard: Bunk Beds*

make dated references to the relevant Australian/New Zealand Standards:

- AS/NZS 2172:1995 *Cots for household use*, and
- AS/NZS 4220:1994 – *Bunk beds*

New editions of both these Standards have recently been issued (AS/NZS 2172:2003 and AS/NZS 4220:2003). However, to date neither of the Regulations has been changed to recognise the new editions of the Standards and hence the old versions continue to have force because they are specifically referred to in the Regulations.

A comparison of the requirements of the old and new editions of both Standards is included in this bulletin.
This bulletin also includes an explanation of the interpretations of several still contentious clauses in both standards applied by Furntech in making assessments of these products.

The New Standards

The new editions of the two Standards do not present any major changes to the requirements for cots or bunk beds.

For cots it would be fairly safe to say that almost any cot, which met the requirements of 1995, would also meet those for 2003.

For bunk beds probably the most significant changes have been to the size range for unacceptable head entrapment gaps and to the requirement for the height of the guardrails, which bring it into line with the equivalent requirements in the Regulation. There have also been some changes to the labelling requirements in relation to ages of children using bunks.

A more detailed summary is set out on our website.

Issues and Interpretations

Snag points

Snag point hazards are an issue, common to both cots and bunks but neither of these Standards, in either edition, provides a universal and meaningful definition of snag points, useful in assessing for such hazards. The approach taken appears to have been to define snag points in terms of size and shape, rather than on the ability of any feature to snag onto clothing or bedding etc. in such a way as to create a hazard.

The objectionable feature of snagging is that it can involve hanging and possible death, which can be quite rapid. Because of this Furntech is more than comfortable about taking a conservative approach to assessing for possible snag points. Two fairly simple and basically similar tests are available for assessing snagging potential:

- The so called ball and chain test, the principle and application of which is described in AS/NZS 2195 – 1999 *Folding cots – safety requirements* and
- The loop of string test.

In the ball and chain test a loop of ball chain (bath plug chain) attached to a spherical weight of 2.5 kg and 115 mm diameter is placed over the feature under consideration and if it catches the weight is lowered to see if it is supported by the snagging point.

The loop of string test involves a piece of string about 500 mm long formed in to a loop and a similar process is followed but the test for snagging is by pulling downward on the lower end of the loop. This is only a "rule of thumb" type test.

Some people have argued that these tests are too conservative, i.e. they identify features as snag points, which should be regarded as safe. However, this pre supposes that there are some other criteria by which a determination of safety of such features can be made, but so far these alternative criteria have not been identified.

In our opinion, any responsible cot or bunk bed manufacturer who has a product on which any feature is identified by either of these tests as being a potential snag point would or should be motivated to take some corrective action. They can then quite readily assess the effectiveness of such action using the same tests.

We intend to make more definitive use of these tests in the future. This may lead to some distress for manufacturers who find their products being refused compliance certification by Furntech but we feel that the adoption of these tests for the assessment of bunk beds will lead to improved integrity of our certification process and safer products in the market place.

Gaps with reducing configurations in bunk beds

Two clauses 6.4.3 (b) and 7.1 (a) in AS/NZS 4220; 1995 which are incorporated into the bunk bed Regulation define gaps through which it is possible to pass a 230 mm diameter test probe as being acceptable provided that they do not have what is termed "reducing configuration" such that it is possible to pass the test probe through the gap in some area and not possible to withdraw it through the reduced configuration of the gap.

While the concept of this requirement is fairly clear, closer consideration shows there are inadequacies in the definition, which can confuse its application in particular circumstances:

- Square or rectangular gaps have reducing configuration in the corners; the construction of a bunk bed without such features would be difficult;
- Gaps, which open upwards, should be regarded as more hazardous than gaps which open downwards. The reducing configurations in the corners of a square or rectangular gap could be regarded as safe if the adjacent sides were horizontal and vertical but possibly not if they were both sloping upwards at 45° to the horizontal.
- Gaps with large included angles in the reducing configuration might be considered less dangerous than gaps with small-included angles.

There are obviously safe and less safe reducing configurations and the difficulty lies in defining the boundary between them. Gaps having curved sides with reducing configurations add possible complication to any resolution of this issue.

An example of a gap having a reducing configuration common in many bunk beds is the gap between the vertical corner post and the upper surface of the arched end of the lower bed.

Furntech has decided to cover this issue by using an interpretation based on a test for gaps defined in the Regulation for bunk beds issued in the USA (Code of Federal Regulations 16 CFR 1213).

The test defined in 16 CFR 1213 uses a defined flat test probe which has an "A" and "B" section and if the B section can be inserted into the gap by more than a critical distance further than the A section the gap fails the test. Gaps having all points of the lower side inclined at an angle more than 45° below horizontal are regarded as inherently safe.

From the geometry of the defined test probe it is apparent that gaps with an included angle greater than 75° will always pass this test and Furntech has decided to use this angle of 75° as a critical parameter for gaps having reducing configuration. We will hold the full application of the test as specified in 16 CFR 1213 as a reserve power.

What is a bunk bed?

While this may appear to be a simple question, the answers to it do create some confusion, which needs to be resolved.
According to AS/NZS 4220: 1994 a bunk bed is either:

a) A set of components that are or can be assembled as beds, one stacked over the other, in which the upper surface of any mattress base is at least 800 mm above floor level or
b) Any bed, other than a hospital bed, in which the upper surface of any mattress base is at least 800 mm above floor level.

This definition has been modified slightly in the 2003 edition of the standard to the effect that any assembly consisting of beds stacked one above the other is considered to be a bunk bed, regardless of the height of the mattress bases, i.e. even if the upper mattress base was only say, 750 mm above floor level.

The definition given in the Commonwealth Consumer Protection Notice Number 1 of 2003 Consumer Product Safety Standard: Bunk Beds also has two parts with slight variations from the definitions in the Australian/New Zealand standard. These variations are however, quite significant. For the purposes of the Regulation a bunk bed is:

a) A set of components that are assembled or are ready for assembly into single beds or double/single combination beds which will be stacked one over the other; or
b) Any single bed, other than a hospital bed, where the upper surface of the mattress base is at least 800 mm above the floor surface.

The reference to double and single beds in this definition is interesting and at the same time confusing and possibly inconsistent. We understand the intended meaning of these terms is that commonly used in relation to size of beds, and consequently, a double sized bed set above a play or workspace is not subject to this Regulation. The inconsistency appears to arise in the application of the first definition in relation to single/double combination beds. The combination of a single bed above a double bed is common and does not present any difficulty in interpretation.

However, a configuration in which a double bed was placed above a single would be subject to the Regulation, while two double beds stacked one over the other would not.

Furntech has decided to develop an internal standard covering this latter option.

New Standards

The following standards have recently been released

- AS 2858:2004 Timber – softwood – visually graded for structural purposes
- AS 3906:2004 Quality of service – guide to customer expectations
- AS/NZS 4266:2004 Reconstituted wood-based panels – Methods of test
- HB 136:2004 Safety aspects. Guidelines for child safety

Major Projects in Victoria

The Victorian Industry Capability Network (formerly the ISO) recently held a major projects forum in Melbourne where a number of significant projects were outlined.

The ICN (Vic) can be contacted on 03 9866 6155 if any member requires further details and how to register expressions of interest.

New AFRDI Members

We would like to welcome the following new members

- Concept Office Solutions
- Hardware by Design
- Sunda International

In addition we would like to thank those members who have recently renewed their membership.

What is AFRDI Blue Tick?

Blue Tick is an undertaking where manufacturers or suppliers of furniture or components submit their products for testing and quality certification to recognised Standards. Companies whose products meet these requirements are listed on the Furntech-AFRDI website (www.furntech.org.au) which is used by many specifiers, manufacturers, buyers and sellers of furniture. Further details on Blue Tick may be found on our website or by contacting the Institute.

AFRDI

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