

## The pyjama Game... or maybe the Nightwear Nightmare !

No one really knows how long people especially children, have been wearing specific clothing at bedtime but there is no doubt that it is a long time. With all this experience we know a lot about nightwear, fire and of course a lot about children...

- ⇒ Children have sensitive skin and need soft clothing without harsh or irritant properties (especially at night).
- ⇒ Children like to play and have a fascination for fire!
- ⇒ Children don't think about the consequences of their actions!
- ⇒ Most homes have naked flames of some sort, whether it is an open fire, candles or smokers materials.
- ⇒ Most textile materials will burn if they come in to contact with a naked flame.
- ⇒ Parents need to be able to wash and dry their children's clothes easily without having to resort to special processes.

It is no surprise then that when it comes to the combination of children, nightwear and fire, adults become understandably nervous.

We also know that for fire to propagate, you need fuel (textile) and air. Limit either the fuel or the air supply<sup>1</sup> and the fire will spread less easily. So as you will see, close fitting is good.

Of course you can limit the likelihood of flame spread by applying a chemical treatment but that approach has the disadvantage that many of these chemicals have side effects as undesirable in some cases as the burning itself, they may also not be able to withstand repeated washing and become ineffective. Alternatively incorporating fibres whose very nature will smother the flame is an option but this limits choice and often requires special washing and drying treatments.

Whilst in the past it has been left entirely to "good fortune" and the parent(s) to ensure the safety of their children, in recent times legislation has been rolled out in several countries to control the materials used in the manufacture of children's nightwear. Historically, each country has approached the subject differently so that there is no single solution to the problem but instead, different rules in every country. Most recently, the EC has issued a new standard: EN 14878 as a classification scheme for nightwear. This standard classifies fabrics as A to C (see below) and gives minimum requirements for different types of nightwear according to these classes. What is not clear is how this standard will impact upon existing National Legislation; for example, the Dutch "agreement" is likely to be revoked now that an alternative European Standard has been published, *this is not likely to be the case in all EC states*. Therefore a manufacturer will still have to produce nightwear to a different specification (with different labelling) in each market country even within the European Union.

### Classification as per EN 14878:

Class	Application
A	Children's nightwear (NOT pyjamas)
B	Children's pyjamas
Class	Babies' nightwear

<sup>1</sup> Loose fitting garments have greater air circulation and therefore carry a greater risk of rapid flame spread (flaring).



In this paper, we have tried to summarise<sup>2</sup> the similarities and differences between the national rules and of course the required labelling. References to the national regulations, standards etc are included as guidance and are correct at the time of publication.

## Considered Documents

<b>European Union</b>	EN 14878:2007 Burning Behaviour of Nightwear: Classification Scheme (Not yet incorporated in to European legislation).
<b>Australia</b>	Legislative Instrument 2007 No 21; Trade Practices (Consumer Product Safety Standards) (Children's Nightwear and Paper Patterns for Children's Nightwear) Regulations 2007.
<b>Canada</b>	Hazardous Products Act
<b>Ireland</b>	S.I. 1979 No 215 Industrial Research and Standards (Section 44) (Children's Nightdresses) (Amendment) Order, 1979 and S.I. No. 3/1979 Industrial Research and Standards (Section 44) (Children's Nightwear) Order, 1979
<b>Netherlands</b>	Covenant: Safety of Nightwear (Flammability) 1997
<b>New Zealand</b>	Product Safety Standard (Children's Nightwear and limited Daywear having reduced fire hazard) Regulations 2005
<b>Norway</b>	Directive on prohibition of highly flammable textiles
<b>Sweden</b>	KOVFS 1985: 8
<b>Switzerland</b>	Verordnung RS 817.023.41; Section 5; Article 16 et seq.
<b>United Kingdom</b>	S.I. 1985 No 2043 Nightwear (Safety) Regulations
<b>United States of America</b>	16 CFR 1615/1616; Code of Federal Regulations; Flammability of Children's Sleepwear

### Notes on flammability tests

1. Norway, Sweden and Switzerland restrict the materials used in clothing generally with no specific nightwear requirement although Norway has greater restrictions for children's clothing than for adults.
2. The Netherlands, USA and Canada restrict the materials used in general clothing and also specifically restrict nightwear materials.
3. Australia, New Zealand, Ireland and UK restrict the materials used in nightwear (and like garments) but make no limitation on general clothing.
4. European standard EN 14878 calls upon the tests in EN 1103 for rate of flame spread and surface flash. It refers to style, age range and performance.

In broad terms, most of the above make attempts to define nightwear for children in terms of size and design. Everyone agrees that loose fitting styles present a greater hazard. The USA and Canada have a detailed specification of dimensional measurement to define "snug fitting" and loose fitting styles. The UK differentiates more simply between Pyjamas (with legs) and nightdresses or nightshirts (without legs) and includes dressing gowns and bathrobes as nightwear. The Irish rules apply only to nightdresses (not pyjamas) although Ireland restricts the use of specific flame retardants on all nightwear. Australia and New Zealand define the garments according to style in a similar manner to UK and Ireland but also include "Limited Daywear"<sup>3</sup>. The Dutch regulations include dressing gowns but specifically exclude bathrobes from the requirement.

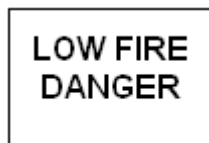
Labelling is also quite different, in the UK for pyjamas and cotton terry bathrobes. **KEEP AWAY FROM FIRE** is mandatory if the materials do not meet the low flammability requirement when tested according to BS 5722 and, **LOW FLAMMABILITY TO BS 5722** if they will meet the requirement. However nightdresses and dressing gowns need no such labelling because they **MUST** meet the low flammability requirement. Nothing prevents the manufacturer from placing a warning label on the goods to say **KEEP AWAY FROM FIRE** even if they are of low flammability as this is judged to be good advice whatever the performance and so it is possible to see both phrases used on pyjamas and cotton terry bathrobes.

<sup>2</sup> This document is not intended to be used as a substitute for the original legislation documents.

<sup>3</sup> Limited Daywear is clothing excluding T-shirts which could be used either as day or nightwear, such as loose fitting boxer shorts, baby all-in-one garments and baby sleeping bags.

The testing and labelling required in Ireland is similar to that of the UK except that I.S. 148 is referred to instead of B.S. 5722 and it is *required* that nightdresses and dressing gowns bear the label LOW FLAMMABILITY TO I.S. 148.

In New Zealand and Australia the labels refer not only to the final garments but also to the paper patterns sold on the retail market to make nightwear.



Four categories<sup>4</sup> of flammability are permissible for nightwear according to fabric flammability and garment style. Categories 1, 2 and 3 must carry the white label and Category 4 must carry the red label. Garments or materials which do not meet the flammability and design restrictions<sup>4</sup> for one of the 4 categories cannot be sold as nightwear.

In the USA, clothing fabrics are tested according to 16 CFR 1610 (45<sup>o</sup> test). Nightwear is tested according to different standards 16 CFR 1615 or 1616 according to age range (the fabric is tested using a vertical specimen with edge ignition). Only materials passing the average and maximum char length requirements<sup>5</sup> are suitable for sleepwear. The garments are classified according to whether they are snug or loose fitting and labelling consists of one of the following:

WEAR SNUG FITTING  
NOT FLAME RESISTANT

For child's safety, garment should fit snugly.  
This garment is not flame resistant.  
Loose-fitting garment is more likely to catch fire.

The Canadian market does not require labelling of this kind but if a flame retardant chemical is applied to the material, a permanent label must state the words "Flame Retardant" and "Ignifugeant" with care instructions to properly launder the product without danger of damaging the FR finish. The flammability testing is carried out by an ASTM method D1230:61 (45<sup>o</sup> test) - the same test as for US apparel - and the flammability judged according to the rate of flame spread. The garment size and dimensions are measured in a similar manner to that used in the USA.

<sup>4</sup> AS/NZS 1249:2003

<sup>5</sup> 16 CFR 1615/16.

The European Standard (EN 14878:2007) classifies the flammability of fabrics (A to C) according to rate of flame spread and surface flash (EN 1103) and refers to garment types and looseness of fit. It recommends fabrics are suitable for nightwear according to age range, minimum flammability performance (Class) and garment type/style. As with all of the National regulations it makes reference to the looseness of fit and recommends that close fitting garments are generally safer.

The Swiss regulations for textile materials generally (including clothing) are also based on EN 1103 (rate of flame spread). There is no special requirement for nightwear.

Norway has adopted the US test: ASTM D1230 for all textiles and for children's textiles including nightwear the rate of burn is more stringent than for general textiles.

Sweden again uses the US 45<sup>o</sup> test; ASTM D1230 and sets a rate of burn at a minimum of 5 seconds for all clothing. There is no special requirement for nightwear nor for children's articles.

***If you are interested in flammability testing and want to know more about the requirements for your products, please do not hesitate to contact us.***

Please also refer to SafeGuards 038/07 on the introduction of requirements for burning behavior of clothing in the Netherlands:

[http://newsletter.sgs.com/eNewsletterPro/uploadedimages/000006/SafeGuards\\_03807\\_Burning\\_Behavior\\_of\\_Clothing\\_NL.pdf](http://newsletter.sgs.com/eNewsletterPro/uploadedimages/000006/SafeGuards_03807_Burning_Behavior_of_Clothing_NL.pdf)

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