SLOVENSKI STANDARD
kSIST-TP FprCEN/TR 13387-4:2014

01-december-2014

Smernice o splošni varnosti - 4. del: Toplotne nevarnosti

General safety guidelines - Part 4: Thermal hazards

Ta slovenski standard je istoveten z: **FprCEN/TR 13387-4**

ICS:

97.190	Otroška oprema	Equipment for children

kSIST-TP FprCEN/TR 13387-4:2014 **en**

TECHNICAL REPORT

RAPPORT TECHNIQUE

TECHNISCHER BERICHT

FINAL DRAFT
FprCEN/TR 13387-4

September 2014

ICS

Will supersede CEN/TR 13387:2004

English Version

General safety guidelines - Part 4: Thermal hazards

This draft Technical Report is submitted to CEN members for Technical Committee Approval. It has been drawn up by the Technical Committee CEN/TC 252.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Warning : This document is not a Technical Report. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a Technical Report.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

Foreword

This document (FprCEN/TR 13387-4:2014) has been prepared by Technical Committee CEN/TC 252 “Child use and care articles”, the secretariat of which is held by AFNOR.

This document is currently submitted to the Technical Committee Approval.

This document will supersede CEN/TR 13387:2004.

FprCEN/TR 13387 comprises the following five parts:

— Safety philosophy and safety assessment (FprCEN/TR 13387-1)

— Chemical hazards (FprCEN/TR 13387-2)

— Mechanical hazards (FprCEN/TR 13387-3)

— Thermal hazards (FprCEN/TR 13387-4)

— Product information (FprCEN/TR 13387-5)

FprCEN/TR 13387-4 should be used in conjunction with FprCEN/TR 13387-1.

This new edition of this European technical report is a hazard based technical report. In comparison with the previous version, the main changes are:

— Flammability and burning hazards: Test methods aligned with EN 71-2:2011+A1.

1 Scope

This Technical Report addresses thermal hazards and is intended to provide guidance for the reduction of these hazards when drafting standards for child use and care articles.

2 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

2.1
flammability
ability of material to burn with a flame under specified test conditions

2.2
flaming debris
material that becomes detached from the sample during the test procedure and continues to flame as it falls

2.3
ignitability
ability to obtain sustained combustion under specified test conditions when a material is exposed to an ignition source

2.4
surface flash
rapid spread of flame over the surface of a material without ignition of its base structure at the same time

2.5
thermal hazard
hazard caused by high or low temperatures

3 Thermal hazards

3.1 Safety philosophy

Thermal hazards include hazards associated with flammability and the burning characteristics of materials, contact with hot and cold surfaces and liquids, contact with flames, contact with products that melt on heating and overheating or exposure of a child to very low or very high temperatures.

Chemical products such as flame retardants which may create chemical hazards should be avoided in child use and care articles. Flammability requirements should be set with a view to avoid the use of flame retardant, this may be solved either by design or use of appropriate materials.

The following materials should not be used in the manufacture of child use and care articles:

— celluloid (cellulose nitrate) and materials with a similar behaviour except when used in varnish or paint;

— materials with a pile surface which produces surface flash on contact with a flame.

In addition child use and care articles should not contain flammable gases, flammable liquids. For EU countries the categories are defined in EU Directives.

3.2 Flammability and burning hazards

3.2.1 General

Some child use and care articles may need testing for surface flash and flammability.

Standards for child use and care articles, when specifying requirements, currently refer to EN 71 "Safety of toys – Part 2 Flammability". The requirements establish limits for the propagation of the flame if a textile material is ignited. Additionally EN 71–2 states that there should be no surface flash on material with surface pile.

The significant characteristics of a material's reaction to fire which should be considered are:

— ignitability;

— flame propagation;

— flaming debris;

— surface flash

Their relative importance depends on the product and the way the product is constructed and used.

It should be taken into consideration that the combustion of some materials may produce toxic fumes which is the most common cause of death in relation to fire.

3.2.2 Rationale

For the majority of child use and care articles, the probability that the product will come close to or be in contact with a source of ignition is low. However, if the product should come close to, or be in contact with an ignition source, the carer should have sufficient time to remove the child before injury occurs. Any rate of spread of flame should therefore be slow and should not produce a surface flash.

3.2.3 Requirements

Child use and care articles for which flammability requirements are appropriate should, comply with one of the following requirements depending on the characteristics of the material and the type of child use and care article in question:

— no surface flash when tested in accordance with EN 71-2:2011, 5.5;

— a recommended maximum rate of spread of flame of 50 mm/s when tested in accordance with EN 71-2: 2011, 5.4;

— no surface flash when tested in accordance with EN 71-2:2011, 5.5, and a recommended maximum rate of spread of flame of 50 mm/s when tested in accordance with EN 71-2:2011, 5.4.

3.3 Hazards from hot and cold surfaces

3.3.1 Rationale

Contact of parts of a child use and care article with the skin or the mouth of a child is common. If these surfaces are too hot or too cold burns can occur.

As children have limited ability to react to contact with hot and cold surfaces, they require protection. Children do not touch in the same way as adults.

Until 24 months of age, children do not have reflexes fast enough to respond to contact with a hot surface. Thus, the contact period may be up to 15 s for very young children. (Extract from CENELEC Guide 29).

It is unlikely that child use and care articles would be designed to generate heat in use and that any change in temperature of the article would be a result of exposure to the sun or cold temperatures.

If a child use and care article generates heat in use, EN ISO 13732-1 recommends maximum temperatures that may be used as a guidance when drafting standards for child use and care articles.

3.3.2 Requirements

Where a part of a child use and care article is likely to be exposed to extremes of temperature and the child will have access to these parts, warnings should be given in the product information warning carers to the dangers associated with hot and cold surfaces.

3.4 Hazards from hot and cold liquids or food

3.4.1 Rationale

Hot liquids and hot food can result in scalds. Children are at risk if they can get access to hot liquids and hot food. A potentially dangerous situation is for example where liquid is too hot in a feeding bottle, hot water coming from the tap or hot food in a dish. The risk from cold liquids or cold food is less likely to occur with child use and care articles.

3.4.2 Requirements

Where the use of a child use and care article could result in a child having access to hot liquids or food, warnings should be given in the product information warning carers to the dangers associated with hot liquids or food.

3.5 Hazards from contact with flames

3.5.1 Rationale

Flames are an obvious hazard to adults but to children they may be an attraction. Where a child use and care article is designed to protect a child against access to flames, it is important that its protective function is adequate.

3.5.2 Requirements

Any protective product should prevent a child reaching the open flames.

3.6 Hyperthermia and hypothermia hazards

3.6.1 Rationale

Overheating, hyperthermia, a rise in the child's core temperature, is a factor that has been associated with sudden infant death syndrome particularly for children under twelve months old. This can occur if the child for example is covered with textiles e.g.: cloths, beddings or the product itself does not allow the heat to be dissipated. Combinations of environmental temperature and products can cause heat build-up also constitutes a hazard.

A lowering of body temperature, hypothermia results in a lowering of the child's core temperature that should be taken into consideration.

3.6.2 Requirements

Warnings should be given in the product information warning carers to the dangers associated with overheating.

Bibliography

[1] EN ISO 13732-1, *Ergonomics of the thermal environment - Methods for the assessment of human responses to contact with surfaces - Part 1: Hot surfaces (ISO 13732-1:2006)*

[2] CLC/Guide 29, *Temperatures of hot surfaces likely to be touched - Guidance document for Technical Committees and manufacturers (Edition 1, 2007-05)*