



# SLOVENSKI STANDARD

## SIST EN 71-2:1995

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### Varnost igrač - 2. del: Vnetljivost

Safety of toys - Part 2: Flammability

Sicherheit von Spielzeug - Teil 2: Entflammbarkeit

Sécurité des jouets - Partie 2: Inflammabilité

Ta slovenski standard je istoveten z: EN 71-2:1993

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EUROPEAN STANDARD

EN 71-2:1993

NORME EUROPÉENNE

EUROPÄISCHE NORM

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UDC 688.72:614.8:536.468:620

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Descriptors: Toys, safety requirements, specification, flammability, approved materials, flammability testing

English version

**Safety of toys - Part 2: Flammability**Sécurité des jouets - Partie 2: Inflammabilité **ITC STANDARD PREVIEW** Sicherheit von Spielzeug - Teil 2:  
Entflammbarkeit**(standards.iteh.ai)**

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Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

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**CEN**European Committee for Standardization  
Comité Européen de Normalisation  
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

## Foreword

This standard constitutes the second part of the European Standard on "Safety of toys". It is intended to eliminate toys that expose a child to danger of fire.

This part should be read in conjunction with part 1.

During the preparation of this standard toys have been considered on a general basis, and it has been decided to treat the products defined in the scope.

This European Standard has been prepared under a Mandate given to CEN by the Commission of the European Communities and supports the essential requirements of EC Directive(s).

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by April 1994, and conflicting national standards shall be withdrawn at the latest by April 1994.

The standard was accepted and in accordance with the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Switzerland, United Kingdom.

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## Introduction

This European Standard for Safety of Toys consists of the following parts:

- Part 1: Mechanical and physical properties
- Part 2: Flammability
- Part 3: Migration of certain elements
- Part 4: Experimental sets for chemistry and related activities
- Part 5: Chemical toys (sets) other than experimental sets

This standard is Part 2 of the European Standard for safety of toys, EN 71.

There is very little data concerning the hazards associated with the flammability of toys. There is a lot of concern over perceived risks but little in the way of hard facts.

Over 80 % of deaths of children arising from fires are due to asphyxiation from fumes. The standard was never intended to address this aspect as it deals strictly with the flammability of materials. In any case, the percentage of combustible materials in the child's environment derived from toys is insignificant compared with other household material such as furniture, curtains, beds etc.

The standard has been devised to address certain hazards. Virtually all materials burn if exposed for long enough to the right ignition source. It has therefore been decided to address toy items that

- a) are clothes worn by the child (disguise costumes) especially where capes, flowing dresses and similar articles are included;
- b) a child could enter such as play tents and wendy houses;
- c) a child cuddles (filled soft toys);
- d) are worn but take the form of masks and wigs etc.

The hazards to be addressed in these cases arise because of the intimate contact between the child and the product. If ignited the materials should burn with a rate of spread of flame which allows the child to remove or drop or get out of the product before serious injury occurs.

## 1 Scope

This Part of this European Standard specifies the categories of flammable materials which are prohibited in all toys and requirements concerning flammability of certain toys when they are submitted to a small source of ignition.

The test methods described in clause 5 are used for the purposes of determining the flammability of toys under the particular test conditions specified. The test results thus obtained cannot be considered as providing an overall indication of the potential fire hazard of toys or materials when subjected to other sources of ignition.

This Part includes general requirements relating to all toys and specific requirements and methods of test relating to the following toys which are considered as being those presenting the greatest hazard:

- beards, moustaches, wigs, masks and other products worn on the head with pile, hair or other attached material;
- disguise costumes (e.g. cowboy outfits, nurses' uniforms) including the associated head wear and toys intended to be worn by a child (excluding products covered by 4.2 and paper novelty hats, e.g. those supplied in crackers);
- toys intended to be entered by a child (e.g. toy tents, puppet theatres, wigwams);
- filled soft toys with a pile surface or textile surface but excluding soft bodied dolls with heads and limbs made entirely from non-textile polymeric material.

NOTE: Additional requirements for flammability of electrical toys are in EN 50088 "Safety of electrical toys" (in preparation).

## 2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

- EN 71-5:1993 Safety of Toys - Part 5: Chemical toys (sets) other than experimental sets
- EN 535:1991 Paints and varnishes - Determination of flow time by use of flow cups
- ISO 6941:1984 Textile fabrics - Burning behaviour - Measurement of flame spread properties of vertically oriented specimens

### 3 Definitions

For the purposes of this Part of EN 71 the following definitions apply:

- 3.1 **flammability:** The ability of a material or a product to burn with a flame under specified test conditions.
- 3.2 **flaming debris:** Material separating from the sample during the test procedure and continuing to flame as it falls.
- 3.3 **self extinguishing:** The representative sample ignites but then subsequently extinguishes before the second marker thread is severed (see 4.4).
- 3.4 **representative sample:** Each individual sample as it appears in the toy. Where there is insufficient material to produce a complete test sample 80 mm x 600 mm in size that material is not tested.
- 3.5 **hair:** Includes materials designed to represent hair (see 4.2).
- 3.6 **filled soft toy:** Toy with body surfaces composed of textile or pile materials. The toy is filled with soft materials (for example expanded polystyrene beads, polyester fibres or polyurethane foam) which allows compression of the body readily with the hand. This includes toys whether clothed or not.
- 3.7 **surface flash:** Rapid spread of flame over the surface of a material, without combustion of the basic structure at that time.

### 4 Requirements

#### 4.1 General

The following materials shall not be used in the manufacture of toys:

- celluloid (cellulose nitrate) and materials with the same behaviour in fire (except when used in varnish or paint);
- materials with a pile surface which produces surface flash on the approach of a flame.

In addition toys shall not contain flammable gases, extremely flammable liquids, highly flammable liquids, flammable liquids and flammable solids, except as provided for below:

- flammable liquids in the form of individual sealed containers having a maximum volume of 15 ml per container;
- highly flammable liquids and flammable liquids being entirely retained within a porous material in capillary channels of writing instruments;
- flammable liquids with a viscosity greater than  $260 \times 10^{-6} \text{ m}^2/\text{s}$  corresponding to a flow time of more than 38 s when determined in accordance with EN 535 : 1991 using cup No 6;
- highly flammable liquids in products specified in EN 71-5 : 1993.

NOTE 1: For EC countries these categories are defined in the European Council Directive 79/831/EEC of 18 September 1979 (published in the Official Journal of the EC No L 259 of 15 October 1979) relating to the classification, packaging and labelling of dangerous substances.

NOTE 2: Different legal requirements may exist in non-EC countries.

#### 4.2 Beards, moustaches, wigs, masks and other products worn on the head with hair or other attached materials

4.2.1 Beards, moustaches, wigs, masks and other products worn on the head with hair, pile or other attachments (e.g. paper strands) where the hair, pile or other attached material protrudes more than or equal to 50 mm from the surface of the product, when tested in accordance with 5.5, shall have a duration of flaming of not more than 2 s after removing the flame.

In addition, if ignition occurs, the greatest length of pile, hair or other attachments which remains shall be:

- a) not less than 50 % of the greatest initial length, when the initial length was 150 mm or more;
- b) not less than 25 % of the greatest initial length, when the initial length was less than 150 mm.

For wavy hair, the length shall be taken as the straightened length. The article is tested as used and in the most onerous conditions, e.g. with plaits unwoven.



4.2.2 Beards, moustaches, wigs, masks and other products worn on the head with hair, pile, or other attachments (e.g. paper strands) other than those used for securing, protruding less than 50 mm from the surface of the product, when tested in accordance with 5.6 shall have a duration of flaming of not more than 2 s (after removal of flame) and a maximum dimension of the burnt area shall be not more than 70 mm measured from the point of application of the flame. Cardboard partial masks with no pile, hair or other attachments (other than those for securing the toys) are excluded, except for those where the distance between the centre of the eyes and the top of the mask is greater than 130 mm.

4.3 Disguise costumes including the associated headwear and other toys intended to be worn by children (excluding products covered by 4.2 and paper novelty hats)

When these toys are tested in accordance with 5.7, the rate of spread of flame shall be less than or equal to 30 mm/s.

If the rate of spread of flame is between 10 mm/s and 30 mm/s both the toy and the packaging shall be marked with the following warning:

"Warning! Keep away from fire"

4.4 Toys intended to be entered by a child

When representative samples of these toys are tested in accordance with 5.7, the rate of spread of flame shall be less than or equal to 30 mm/s.

If the representative sample has a rate of spread of flame greater than 20 mm/s there shall be no flaming debris (see 3.2).

If the representative sample is self extinguishing (see 3.3) the sample is deemed to have passed.

If the rate of spread of flame is between 10 mm/s and 30 mm/s both the toy and the packaging shall be marked with the following warning:

"Warning! Keep away from fire"

4.5 Filled soft toys

When filled soft toys (animals, dolls etc. but excluding dolls with heads and limbs made from non-textile polymeric material) with a pile surface (e.g. velour, plush, imitation fur) or textile surface are tested in accordance with 5.8, the rate of spread of flame on the surface shall be not more than 30 mm/s. A toy shall be tested as supplied including any clothing present with the toy and, if applicable, with the clothes removed if removal can be accomplished without damage to the clothes or toys.

The requirements of this subclause do not apply to toys with a maximum dimension of 150 mm or less.