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Safety of toys - Part 1: Mechanical and physical properties

Sicherheit von Spielzeug - Teil 1: Mechanische und physikalische Eigenschaften

Sécurité des jouets - Partie 1: Propriétés mécaniques et physiques

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Safety of toys - Part 1: Mechanical and physical properties

Sécurité des jouets - Partie 1: Propriétés mécaniques et physiques

Sicherheit von Spielzeug - Teil 1: Mechanische und physikalische Eigenschaften

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 52.

If this draft becomes a European Standard, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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European foreword

This document (prEN 71-1:2024) has been prepared by Technical Committee CEN/TC 52 "Safety of toys", the secretariat of which is held by DS.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 71-1:2014+A1:2018.

This document has been prepared under a standardization request addressed to CEN by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

For the relationship with EU Legislation, see informative Annex ZA, which is an integral part of this document.

NOTE 1 Different legal requirements might exist in non-EU countries.

This document constitutes the first part of the EN 71 series of standards on safety of toys.

EN 71, Safety of toys, consists of the following parts:

- Part 1: Mechanical and physical properties (this document);
- 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;
- Part 7: Finger paints Requirements and test methods;
- Part 8: Activity toys for domestic use;
- Part 10: Organic chemical compounds Sample preparation and extraction;
- Part 11: Organic chemical compounds Methods of analysis;
- Part 12: N-Nitrosamines and N-nitrosatable substances;
- Part 13: Olfactory board games, cosmetic kits and gustative games;
- Part 14: Trampolines for domestic use;
- *Part 15: Formamide in foam toy materials (content)* (under development);
- Part 16: Certain chlorinated phosphorus flame retardants (TCEP, TCPP, TDCP) in toy materials (under development);
- Part 17: Certain isothiazolinones (MIT, CIT, BIT) in aqueous toy materials (under development);

Part 18: Phenol in aqueous (content) and polymeric (migration) toy materials (under development);

- Part 19: Migration of bisphenol A from toy materials (under development);
- Part 20: Microbiological safety of toys containing accessible aqueous media (under development).

It is up to the user of the standard to determine whether or not a toy is included in the scope of several of the above parts of the EN 71 series, and to apply each applicable standard accordingly. Normative references from one part of the EN 71 series to another, are therefore normally not provided in the individual parts.

NOTE 2 In addition to the above parts of EN 71, the following documents have been published:

- CEN/TR 15071, Safety of toys National translations of warnings and instructions for use in the EN 71 series,
- CEN/TR 15371 (parts 1 and 2), Safety of toys Interpretations [32],
- CEN/TR 16918, Safety of toys Children's mouthing behaviour in contact with toys,
- CEN/TR 17695, Safety of toys Mechanical and physical properties Guidance on categorisation of projectile toys within EN 71-1,
- CEN/TS 17973, Safety of toys Categorization of slime type materials, and
- CEN ISO/TR 8124-8, Safety of toys Part 8: Age determination guidelines [22].

The following significant editorial and technical changes have been implemented in this new edition:

Clause/Paragraph/	Change
Table/Figure	Document Preview
3.11	Update and clarification of the definition of "close-to-the-ear toy".
3.27	New definition of the term "flash". 1 2024
3.37 standards.iteh.ai	Updated definition of the term "large and bulky toy".
3.38	New definition of the term "latex balloon".
	Deleted the definition of maximum saddle height.
	Deleted the definition of plastic sheeting (was 3.52).
3.55	New definition of the term "reference box".
3.58	New definition of the term "resilient material".
3.60	New subclause heading for definitions related to ride-on toys.
3.61	Update and clarification of the definition of "soft-filled toy" .
3.76	New definition of the term "toy chest".
4.6	Revised the requirements for expanding materials.
4.7	Added an exemption for trampolines covered by EN 71-14.
4.8	Added an exemption for trampolines covered by EN 71-14.
4.9	Added clarification about protrusions addressed by the requirements. Added an exemption for trampolines covered by EN 71-14.
4.10.4	Added an exemption for trampolines covered by EN 71-14.

Clause/Paragraph/ Table/Figure	Change
4.14.1	Updated and clarified the requirement with respect to ventilation, particularly when multiple openings are used. A new test method for assessing groups of openings was referenced. A new test method for assessing the escape force was referenced. Added an exemption for trampolines covered by EN 71-14.
4.14.2	Updated and clarified the requirement with respect to ventilation, particularly when multiple openings are used. A new test method for assessing groups of openings was referenced. The figure was updated. A new test method for assessing the escape force was referenced.
4.15	Update and reformat of the requirements for toys intended to bear the mass of a child. All requirements for toys intended to bear the mass of a child have been consolidated under this clause.
4.17.3.2	Updated the note to clarify how leading edges on projectiles can be determined.
4.17.4.3	Clarified that the reference to 4.17.3.2 does not apply.
4.17.4.4	Clarified that the reference to 4.17.3.2 does not apply.
4.18	Clarified which provisions of the referenced standard are excluded.
4.23.3	Clarified the exemption also applies to magnetic components.
4.24	Clarified that yo-yo balls comply with the requirement if the tether breaks during the testing.
4.28	Add a new requirement for toys that imitate food.
5.1	Added an exemption from the requirements for sand and confirmed that inflatable toys are assessed inflated or deflated.
5.1 a) tandards.iteh.ai/catalog	Clarified that the test for paperboard components applies to components which are individually separate and distinct and, that it does not apply to parts of paperboard torn or broken off of larger paperboard components.
5.1 e)	Clarified that the requirement also applies to glued wooden components.
5.2 b)	Clarified that holes which permit small parts to pass through are not excluded from the requirement.
5.4.9.1	Clarified that the requirement applies to toys intended to be strung across a cradle, cot or perambulator by means of strings, cords, elastics or straps.
5.8	Clarified that the requirements do not apply to elements intended to fix toys to a crib provided the instructions indicate the fixings are to be removed before giving the item to a child.
5.14	Added a requirement to ensure it is possible to join the parts of cords after they have been separated in line with 5.4.
6	Clarified that the packaging requirements apply regardless of whether the toy is marked for adult assembly.
7.1	Further clarified that although the subclauses of 7 each include the word warning, it is permissible to replace several uses of the word warning with a single use of the word warning.

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Clause/Paragraph/ Table/Figure	Change
7.2	Clarified that where the symbol is used it is to be preceded by the word "warning".
7.7	Added an example of a toy where it would be considered unreasonable to be able aim it at the face.
7.14	All warning requirements related to toys intended to bear the mass of a child have been consolidated under Clause 7.14.
7.14.2	Added a new option of using graphical symbols for indicating that protective equipment shall be worn.
7.14.10	Added a new requirement that toys intended to bear the mass of a child should come with appropriate maintenance instructions.
8	Ensure the terms "load" and "mass" were used correctly throughout the clause.
8.4.2	Clarified that the tension force is to be applied in line with the major axis of the component under test or at right angles to the edge of the component under test.
8.4.2.1	Deleted incorrect references to suction cups.
8.4.2.5	Clarified that the perpendicular tension test should be carried out in the most onerous direction.
8.4.2.6	Clarified that tension force should be applied to the blade and its connecting parts only and not to parts such as the centre hub or motor spindle.
8.5	Added an allowance to drop in random orientations when the most onerous drop orientation cannot be located. Updated the referenced standards.
8.7	Clarified the position of the part under text.
8.8 https://standards.iteh.ai	Clarified that the disc through which the compression force is applied, it to be applied flat, to the surface of the toy.
8.9	Changed the temperature of the water used in the soaking test to align with other international standards and added tolerances.
8.11.2.2	Updated the normative reference.
8.13	Clarified that the wire should be bent at the clamping point rather than allowing flexibility of the wire. Clarified what is meant by one test cycle.
8.14	Revised the test method for expanding materials.
8.16	Clarified the test method for the geometric shape of certain toys and divided into subclauses for templates A and B.
8.21	All test methods related to toys intended to bear the mass of a child have been consolidated under Clause 8.21.
8.21.3	A revised stability requirement has been included to address fore and aft stability as well as sideways stability.
8.21.4	A new test method for handlebar impact has been introduced.
8.21.5	A new test method addressing brake performance has been introduced.
8.21.7	Revised forces and an updated method have been introduced in the test method for the strength of toy scooter steering tubes.

Clause/Paragraph/ Table/Figure	Change
8.21.8	A new method to assess the security of handlebar stems is introduced.
8.21.9	A new method to test the strength of stabilizers is introduced.
8.21.10	A new method to test the security of seat posts has been introduced.
8.23	The test methods related to projectile speed and energy have been updated and clarified.
8.28.1.5	Removed the referenced standard for the reference box in favour of the newly defined term.
8.30	Added a requirement for toys that contain one magnet only and no metal mating component
8.33.2	Clarified that for yo-yo balls where the tether breaks during the test are considered to comply with the requirement
8.41	The previous 8.4.2.5 (wall impact test) was moved to this new clause.
8.42	Introduced a new method to test the escape force of toys that a child can enter.
8.43	Introduced a new method to test when a combinations of ventilation openings can be considered a single group.
Annex A	Several sections have been updated.

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Introduction

This European Standard aims at reducing as far as possible those hazards which are not evident to users; it does not cover inherent hazards (e.g. instability of two-wheeled scooters, sharp needles in a sewing kit, etc.) that are obvious to children or the persons in charge of them. Assuming that the toys are used in the intended manner they should not present any further hazard to children for whom they are intended (according to Directive 2009/48/EC (Toy Safety Directive) [21] "intended for use by" means that a parent or supervisor shall reasonably be able to assume by virtue of the functions, dimensions and characteristics of a toy that it is intended for use by children of the stated age group"). Allowance should also be made for foreseeable use, bearing in mind the behaviour of children who do not generally share the same degree of care as the average adult user.

As a general rule, toys are designed and manufactured for particular ages of children. Their characteristics are related to the age and stage of development of the children, and their use presupposes certain aptitudes.

Accidents are frequently due to a toy either being given to a child for whom it is not intended, or being used for a purpose other than that for which it was designed. Great care should therefore be taken when choosing a toy or game; account should be taken of the mental and physical development of the child who will be using it.

The requirements of this European Standard do not release parents or carers from their responsibility of watching over the child while he or she is playing.

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