

ANEC position on the possible streamlining of the legal and standardisation frameworks for toy safety

Background

In June 2008, the (then) European Commissioner for Consumer Affairs, Meglena Kuneva, visited China for high-level talks with the Chinese authorities on the actions being taken by the EU and China in the wake of the 'summer of recalls'. The ANEC Secretary-General was invited to join the mission as a special guest.

The visit was also the first to China by the Commissioner after publication of the report *Evaluating business safety measures in the toy supply chain*. The report brought together the results of an evaluation project undertaken under the direction of an independent expert group aided by the Commission. Helen Amundsen of the Danish Consumer Council participated for ANEC and BEUC in the expert group.

The report detailed over 50 recommendations aimed at economic operators throughout the supply chain. A key finding for the Commission was perception among manufacturers that the European standards for toy safety were complex. The report went on to stress that this complexity, combined with a proliferation of standards for toy safety both at the international (ISO) level and in other main markets, led to interpretation and compliance problems for Chinese manufacturers. Moreover, as most Chinese products were exported to the USA, the report revealed a bias towards compliance with USA standards.

This finding was reinforced during a tour by Mrs Kuneva and the delegation of a testing laboratory in Guangzhou. During discussions there, it was stressed to the delegation that Chinese toy manufacturers needed to meet 15 combinations of legal and standardisation frameworks in order to export to their main markets.

Noting the ANEC remit to represent European consumers in standardisation, Mrs Kuneva invited the Secretary-General to consider an initiative which would enable a streamlining of these frameworks to take place.

In autumn 2008, the ANEC Steering Committee (the executive board of the association) agreed to launch a research study to consider whether such streamlining was feasible. The aims of the study were:

- *To examine the legislative environments for toys in the EU (notably, the Toy Safety Directive 88/378/EEC and its proposed revision¹) and the USA and assess the degree to which the legal requirements of each are met by the ATSM, ISO/IEC and CEN/CENELEC standards for toys.*

¹ Since adopted as Directive 2009/48/EC

- *To assess the technical additions and/or modifications that need to be made to the ISO and IEC series of standards for toys to ensure the highest level of consumer protection possible, taking into account:*
- *- the Toy Safety Directive 88/378/EEC and its proposed revision*
 - *the different foreseeable hazards for children (chemical, mechanical, EMF) as well as risk assessment methodologies*
 - *the interplay between the standardisation and legislative frameworks for toys in the EU and the USA*

Following a restricted call for tender, SMP Svensk Maskinprovning AB was appointed the contractor to undertake the study.

In late 2008, ANEC was alerted to a similar study being conducted by the International Council of Toy Industries (ICTI). In February 2009, and after consultation with ICTI, the ANEC Steering Committee agreed to amend the ANEC study in order to avoid duplication of preliminary work: the ANEC study would now be a peer review of the ICTI study with the following objectives:

- *To undertake a peer review of the ICTI Review of Global Toy Safety Standards, including a gap analysis, in order to identify whether further elements are needed to achieve the highest level of safety practicable.*
- *Further to the peer review, to elaborate general proposals to revise the existing CEN, ISO and ASTM standards in order to develop global standards, taking into account:*
 - *the revised Toy Safety Directive 2009/48/EC*
 - *the different foreseeable hazards for children (chemical, mechanical, EMF)*
 - *the requirements of the standardisation and legislative frameworks for toys, at least in the EU and USA.*

SMP presented the report of the study to ANEC on 30 October 2009. It was approved by the ANEC Steering Committee in December 2009.

ANEC position

1. ANEC notes the finding of the study that there are sufficient similarities among the ASTM, CEN and ISO standards – especially in the requirements for mechanical and physical properties – for first steps towards a closer convergence to be possible.

We believe, however, that the difficulties in achieving closer convergence beyond these first steps must be stressed. Bearing in mind the strong global resistance to REACH², and shortcomings of requirements for chemicals in the revised Toy Safety Directive, ANEC particularly doubts the possibility of an agreement at international level on chemical requirements in which protection of the consumer is paramount. Moreover, the resources needed to achieve even the first steps on a convergence of mechanical and physical properties must not be underestimated.

2. ANEC stresses the conclusion of the study that the convergence of the standards is dependent upon greater coherence of the legislation which governs the production and sale of toys in principal markets.
3. In the achieving a greater coherence of legislation and the deeper convergence of standards, ANEC insists legislators and standardisers put aside regional differences and adopt requirements that offer consumers the highest levels of safety possible. It must not be forgotten that children are the most vulnerable consumers and are dependent on others to ensure their protection. ANEC has serious concern that the precautionary principle is not accepted as an essential element of toy legislation by many legislators outside Europe. It is unacceptable to us that some legislators are prepared to act only when evidence of serious (or fatal) accidents is available. We would lobby against the adoption of compromises which might see toys that are now illegal in Europe from being placed on the European market.
4. As a European contribution to an improved global framework for toy safety, ANEC urges that the revised Toy Safety Directive be amended to regulate noise levels in toys further; to prohibit the many dangerous substances still permitted in toys and to introduce an obligatory, independent check on the conformity to legislation of high-risk toys (such as those containing neodymium magnets or toys for the very young children who cannot sit up unaided). The RAPEX system, and checks done by PROSAFE, both provide evidence of non-compliant toys aimed at the youngest of children.

² European Regulation on **R**egistration, **E**valuation, **A**uthorisation and Restriction of **C**hemical substances (2006/1907/EC)

5. Since the development of the study, ANEC notes that:
- the Chairs and Secretaries of toy safety committees from ASTM, CEN and ISO met in the margins of the ISO/TC 181 'Safety of toys' meeting in November 2009 to identify ways of achieving increased cooperation in standardisation.
 - a meeting of the ASTM toy safety committee was held in conjunction with the ISO/TC 181 meeting with ISO experts invited to discuss emerging issues.
 - ISO/TC 181 has established an advisory panel to monitor emerging issues and to make recommendations on new work.

ANEC sees these actions as ways to encourage the convergence of standards and avoid divergence. In doing so, ANEC appreciates the value of ISO in providing an international forum for the discussion of issues among standards practitioners from around the world. But we caution that the effective participation of experts from Europe and other regions in ISO is dependent upon funding being available. This is especially true for advocates of the consumer or environmental interest.

6. ANEC notes the lack of an international dialogue among legislators responsible for toy safety. We regret that most debate appears to take place between countries (or regions) bilaterally or trilaterally. We believe little progress on the convergence of legislation will be possible until the issue of toy safety is elevated within a forum such as the UN or OECD.
7. Bearing in mind the dependence of the deeper convergence of standards on the streamlining of toy legislation and the paucity of its own resources, ANEC does not believe it is able to contribute further beyond the actions it already pursues at the European level. However, in making the report of our study publicly available in support of this position paper, we trust (in association with the ICTI study) that we have provided a guide to both the opportunities and challenges presented.

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Annex: ANEC study (ANEC-R&T-2008-SC-004)



IMPORTANT

**The publication of this Report does not imply the approval
by ANEC of its recommendations or findings,
individually or collectively**

REPORT

ANEC-R&T-2008-SC-004

SMP project number: F80066

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**Study commissioned by ANEC, the European consumer voice in
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REPORT

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Comparison of different toy standards and associated legislations

Peer- review of the ICTI Review of Global Toy Safety Standards report

ANEC-R&T-2008—SC-004

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1. INTRODUCTION

In June 2008, the European Commissioner for Consumers visited China to review the progress made by the Chinese authorities in ensuring the safety of products intended for export and the ANEC Secretary-General joined the delegation. The diversity of worldwide toy legislation and technical standards was identified as difficulty for Chinese manufacturers in ensuring the conformity of their products and Chinese authorities made a plea for the development of an effective international standard in order to effectively protect consumers.

As a potential contribution to this goal, ANEC commissioned a research project aiming at comparing the requirements of toy legislation in certain markets against the provisions of the ISO/IEC, ASTM and CEN/CENELEC standards for toys and at assessing if and under which conditions the ISO 8124 series of standards could be developed into one having true global relevance.

SMP Svensk Maskinprovning (Christian Wetterberg) was commissioned to carry out a project with the following main purposes:

- *To examine the legislative environments for toys of the European Union (both the present Toy Safety Directive and its revision), United States, China, and Japan and assess the degree to which the legal requirements in each are met by the ASTM, ISO/IEC and CEN/CENELEC standards for toys*
- *To assess the technical additions and/or modifications that need to be made to the ISO and IEC series of standards to ensure the highest level of consumer protection possible taking into account:*
 - *the present Toy Safety Directive and its proposed revision;*
 - *the different foreseeable hazards for children (chemical, mechanical, EMF, etc) as well as risk assessment methodologies;*
 - *the interplay between the standardisation and legislative frameworks for toys in the EU, US and Japan*

After the commissioning of the project, it became evident that an attempt in this direction was already being made by the International Council of Toy Industries (ICTI). After contacts with ICTI, ANEC therefore proposed and agreed that the purpose and scope of the ANEC-commissioned project be revised to the following:

- *Carry out a peer-review , including a gap-analysis, of the ICTI Review of Global Toy Safety Standards report prepared by Ian Anderson, Ambit Consultancy (draft version April 2009) in order to identify whether additional elements are needed in order to offer the highest level of safety practicable;*

- *Following this peer-review to elaborate general proposals to revise the existing CEN, ISO and ASTM standards and develop global standards taking into account:*
 - *the revised EU Toy Safety Directive;*
 - *the different foreseeable hazards for children (chemical, mechanical, EMF, etc) as well as risk assessment methodologies;*
 - *the requirements of the standardisation and legislative frameworks for toys in at least the EU and the USA;*

The study is divided in the following main sections:

- General evaluation of the material supplied by ICTI, including comments on factors that complicated the peer-review
- General gap analysis with remarks directed at specific areas of risk (e.g. mechanical and physical properties, heavy metals, acoustics etc.). Comments are also made on recent and coming changes in legislation and standards and the effect these may have on future attempts to harmonise standards
- Detailed gap analysis of the six parts of the ICTI-review, pointing out smaller gaps in the ICTI-review
- Comments on the ICTI-recommendations for harmonisation given in the comparison between ASTM F 963 and EU-requirements with the aim to highlight recommendations which need further consideration
- Presentation of the legislative environment for the safety of toys in Europe and USA

Annex 1 contains an example of a schematic compilation of the strictest requirements that are presently included either in any of the three standards covered by the ICTI-review (ISO 8124-1:2009, ASTM F963-08 and EN 71-1:2005+A9:2009) or in 2009/48/EC, and that are related to the risk of asphyxiation.

2. EXECUTIVE SUMMARY

A peer -review, including a gap-analysis, has been carried out of the ICTI (International Council of Toy Industries) Review of Global Toy Safety Standards report prepared by Ian Anderson, Ambit Consultancy (draft version April 2009).

The comparison that has been made by ICTI is in many aspects an excellent piece of work and it will facilitate any future attempts to harmonise standards and legislation across Europe, the US and internationally.

The comparison includes not only the European and International toy safety standards regarding “Mechanical and physical properties” (EN 71-1 and ISO 8124-1) but also other European standards (such as those for flammability and for migration of heavy metals) and legislation and of course the US standard ASTM F963.

The result of the comparison is presented in at least 6 different documents which have obviously been made at different times since they are not based on the same version of the standards that have been compared. It is a weakness that the result is presented in many documents since it is very difficult to evaluate whether all aspects have been covered and whether the recommended actions are suitable in order to achieve a proposal that is acceptable to all parties. In addition, it is confusing that the recommendations are sometimes in conflict with each other.

The part of the study that regards mechanical and physical requirements is the most advanced. The peer-review shows that even though a lot of time has been spent on comparing requirements, there are still big and small gaps that have not been covered and this is understandable. It is a very complex task to take all aspects into consideration and it is foreseeable that a lot of detailed work will be needed if a final proposal for a harmonised standard is to be drafted. Also this peer-review is unlikely to have pointed out all gaps.

In the comparison that uses ASTM F963 as a basis and EU-standards/directives for comparison, the scope extends far beyond the “Mechanical and Physical properties” and enters subjects related to hazardous substances, microbiological contamination, electrical hazards, cosmetics etc. It is obvious that many of these subjects are very complex to compare and that many gaps need to be closed before the study can be claimed to have covered and proposed a harmonised approach also in all these areas.

It is unclear where the level of ambition of the study lies. If the ambition has been to cover all safety issues related to toys, there is still a long way to go. However, as mentioned above, the study is a very valuable tool if the ambition has been to

supply a basis for starting to harmonise requirements in the area of mechanical and physical properties and perhaps also some other areas.

The picture is complicated both by the fact that new amendments are continuously published to all the applicable standards and by the fact that the Consumer Product Safety Improvement Act and the new European directive for the Safety of Toys will have a great impact on toy regulations and standards in Europe and the US.

It is clear that the standardisation organisations themselves cannot harmonize the standards alone – legislators need to be involved and active and need to be a driving force.

The ICTI-comparison has correctly pointed out that a major difference between ASTM & ISO standards and the EN is the so called age-grading system. ISO and ASTM has three main age categories (0-18 months, 18-36 months and 36-96 months) but also 48, 60 and 72 months and 14 years. Test forces etc. differ for the main age groups, and, with regard to test masses, ASTM uses a different test mass for each age.

ICTI has also pointed out differences in the so called “use and abuse/foreseeable use” tests and proposes how these can be harmonised. However, there are also differences in when and how these tests are applied that need to be further addressed.

Conclusion

The existence of numerous legislative frameworks for toys around the world complicates the task of harmonizing the requirements of the principal toy standards used today (i.e. ASTM, EN and ISO). Moreover, the different approaches taken in the development of these standards makes it very difficult (if not impossible) simply to ‘cherry pick’ the optimum requirements of each into a robust international standard of real global currency.

That said, there are sufficient similarities between the standards - particularly in their requirements for physical and mechanical properties - for a closer convergence of the standards to be possible. However, this convergence cannot be led by the standardisers alone and will need the full and active support of the legislators in achieving a coherence of the over-arching legislation in regulated markets.

In the view of the author, a first and valuable prelude to the harmonisation of requirements in improving compliance and so increasing consumer protection would be to seek the harmonisation of test methods. In order to move forward with

such harmonisation it will be necessary to provide concrete proposals with detailed wording for stakeholders to study and assess. The ICTI-review does not contain any such compiled proposal but instead give more general recommendations which sometimes contain both large and small gaps. A simple example of how the strictest requirements, with regard to asphyxiation risks, in the referenced standards and legislations could be complied to form a basis for a standard is presented in Annex I.

3. CONTENTS OF THE ICTI REVIEW OF GLOBAL TOY SAFETY STANDARDS REPORT

In the following, the reference number only will be used instead of the full title of the following standards:

ASTM International F963 Standard Consumer Safety Specification for Toy Safety.

The number immediately following the designation F963 indicates the year of original adoption or, in the case of revision, the year of last revision. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

International Standard ISO 8124 Safety of toys

The number immediately following the designation 8124 indicates the part of the series of standards under the designation 8124:

- Part 1: Safety aspects related to mechanical and physical properties
- Part 2: Flammability
- Part 3: Migration of certain elements

European Standards EN 71 Safety of toys

The number immediately following the designation 8124 indicates the part of the series of standards under the designation 71:

- Part 1: Safety aspects related to 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
- Part 7: Finger paints – Requirements and test methods
- Part 8: Swings, slides and similar activity toys for indoor and outdoor family domestic use
- Part 9: Organic chemical compounds – Requirements
- Part 10: Organic chemical compounds – Sample preparation and extraction
- Part 11: Organic chemical compounds - Methods of analysis

The year after this number indicates the year of publication of the standard. Any additional designation (e.g. +A6:2008) indicates the number of the last amendment which has been included in the standard, and the year of publication of this amendment.

European Standard EN/IEC 62115 Electrical toys - Safety

The peer-review covers the following documents made available by ICTI (International Council of Toy Industries) in April 2009:

3.1. Comparison Table ASTM F963-07e1/EU Toys Standards

This part compares ASTM F963-08 (regardless of the fact that F963-07 is indicated in the main heading of the table) with 71-1:2005+A6:2008. Amendment 8 (magnets) to EN 71-1 is also mentioned in the text of the table but amendments A7 and A9 to the same standard are not mentioned.

The table does contain references to prA9 of EN 71-1. This is probably erroneous and should be prA11 which is a draft amendment for new requirements relating to suction cups on projectiles intended for children over three years.

The comparison also refers to EN 62115 and various European directives.

Deviations/differences to ASTM F963-08 are tabled and recommendations for changes to either EN 71-1 or ASTM F963 are given in the right hand column.

3.2. Comparison Table: EU Toys Standards/ASTM F963-07e1

This part uses EN 71-1:2005+A6:2008 as a basis and tables deviations/differences in relation to ASTM F963-08 (regardless of the indication of F963-07 in the main heading in the table). The comparison does not take into account A7, A8 or A9 to EN 71-1.

Recommendations for changes to either EN 71-1 or ASTM F963 are given in the right hand column.

3.3. Comparison Table ISO 8124-1 - EN71-1 - ASTM F963

This part compares EN 71-1:2005+A4:2007, ISO 8124-1:2000+A1+A2 and ASTM F963 (ε1).

3.4. Comparison Table Flammability

In this table the requirements of EN71-2:2006+A1:2007, ISO 8124-2:2007 and ASTM F963-07 are compared.

3.5. Comparison Table Heavy Metals

The table lists requirements from CPSC, ASTM F963-07, EN 71-3 and AS/NZ ISO 8124-3.

3.6. Comparison Table Use and Abuse tests

The “use and abuse”-tests in ASTM F963-07 and ISO 8124-1 are compared with the “foreseeable use”-tests in EN 71-1.

4. REMARKS ON THE MATERIAL SUPPLIED BY ICTI

4.1. *General*

Within its scope, the comparison is very detailed and comprehensive. Two parts of the study; namely EN 71-1 vs. ASTM 963 (see 3.2) and ISO – EN – ASTM (see 3.3), however, are more or less focused only on mechanical and physical requirements (i.e. the basis is ISO 8124-1 and EN 71-1, respectively).

The third and also the most comprehensive part of the study is the one presented in 3.1 above (ASTM-standard versus European standards). Due to the fact that ASTM F963 includes requirements for flammability, toxicology, electrical/thermal energy, pacifiers, battery operated toys, art materials (with play value), toy gun marking, cosmetics etc., this comparison is by far the widest and it makes reference to several European standards, to the Toy Safety Directive and also to other European directives.

To summarise, the comparison is in many aspects an excellent piece of work when it comes to mechanical and physical requirements but it does not cover all requirements that apply to toys in various standards and related legislation.

4.2. *Different scopes in the three tables*

The three comparison tables do not cover the same scope. Each comparison uses the requirements of a specific standard as a base and aims at establishing whether equivalent requirements exist in other standards (and in some cases legislation). The result is that when, for example, ISO 8214-1 is compared with ASTM 963 and EN 71-1, it is not mentioned that the other two standards cover requirements that are not dealt with in part 1 of the ISO-standard.

Another example is that there are ASTM-standards such as F 1148-03 “Standard Consumer Safety Performance Specification for Home Playground Equipment”, and F 2264-03 “Standard Consumer Safety Specification for Non-Powered Scooters” and requirements for bicycles in the Code of Federal Regulations (16 CFR 1512), but the requirements in these are not mentioned in the any of the comparisons since the requirements are not included in ASTM F963.

The widest scope of any of the comparisons is the one which uses the ASTM-standard as a basis since requirements for flammability, chemical risks, hygiene etc. are addressed and references are made to the EN 71-standards, EN 62115, and various European directives.

However, in the EU - ASTM comparison, the reverse approach has not been taken (no comparison is made with these other existing European toy safety standards as a basis).

If the requirements in, for example, EN 71-4 (Experimental sets for chemistry), 71-5 (Chemical toys other than experimental sets), 71-7 (Finger paints), 71-8 (Activity toys), 71-9 to 71-11 (Organic chemical compounds), 62115 (Electrical toys) etc had been compared with existing ASTM- or ISO-requirements, the resulting picture would have been another. ISO 8124 does not yet have equivalents to 71-4, 71-5, 71-7 and 71-8 but this is not mentioned in the comparison.

Finally, no comparison has been made which includes the many European directives which are not toy-specific but that do apply to toys (see 8.1.3).

4.3. Different recommendations in the tables

It appears that the three comparison tables have not been drafted by the same person and therefore one can in some cases find conflicting recommendations in the various tables on how the standards should be amended in order to achieve a harmonised standard.

4.4. No compiled proposal

The ICTI-study does not result in a compiled proposal for a harmonised standard. Instead, recommendations will be found in either the three tables or the three spreadsheets and as mentioned above these recommendations are not always in line. These recommendations in some cases cover a lot more than mechanical and physical requirements and it is difficult to get a clear picture of the level of ambition with the ICTI-comparison.

4.5. Different versions of the standard have been used

When a study is carried out a deadline needs to be set. Thus, any amendments that are introduced after the deadline will of course not be covered in the study. This is extra noteworthy in the current situation where several amendments to standards have been issued during the last year.

In the comparisons, different versions of the standards have been referenced. The tables seem to have been drafted at different times and in each table the latest versions of the standards in question have been used. Also after the finalisation of the ICTI-comparison, new amendments to the ISO 8124 and EN 71-1 standards have been published.

4.6. New legislation is only partly covered

The legislative environment for toys in both the US and in Europe has undergone extensive changes during the last year and will keep changing over the next few years. For example, the effect of the new European directive 2009/48/EC on the safety of toys will have a major impact on the chemical requirements and this has only been partly considered in the comparison for understandable reasons.

4.7. *Miscellaneous*

In the US – EU comparison, reference is made to documents that have not been made available by ICTI. The references are to documents “SGSCT 2009-001, 2009-002, 2009-003 and 2009-004”). It is presumed that these documents are revised or previous versions of the tables for comparison of e.g. flammability, use- and abuse and heavy metals that were supplied by ICTI.

5. GENERAL GAP ANALYSIS

5.1. *Mechanical and physical requirements*

It needs to be accepted that a study must have a deadline with regard to which amendments to standards or implementations of legislation that should be covered. It is, however, confusing to have different deadlines for different parts of a study. For the ISO-EN-ASTM comparison EN 71-1:2005+A4:2007 has been used but in the US-EU comparison EN 71-1:2005+A6:2008 (and partly A8) has been used. Regarding the ASTM-standard, the F963-07 (e1) has been used in the ISO-based comparison and the F963-08 has been used in the other comparisons. Therefore, at least 4 amendments to EN 71-1 and one important revision of F963 have not been considered in the ISO-based comparison.

In addition, other elements are missed in the ISO-EN-ASTM comparison, since it only uses the requirements in the ISO-standard as a basis. This makes the comparison incomplete since the EN- and ASTM-standards include requirements which are not mentioned in the ISO-standard.

In combination, this means that the following items, for example, have not been covered in the ISO-based comparison:

EN-requirements for

- Size and shape of certain toys (covered books, building blocks, hand-held activity toys, and legs of baby gyms)
- Glass
- Toy scooters
- Magnets
- Monofilament fibres
- Suction cups

ASTM-requirements for:

- Nails and fasteners
- Wheels tires and axles
- Nail, screw, and bolt shapes that weigh less than 1.1 lb (0.5 kg)
- Yo yo –balls
- Magnets
- Jaw entrapment

The EN 71-series includes a standard (EN 71-8) for Activity toys (Swings, slides and similar activity toys for indoor and outdoor family domestic use). This standard is more or less ignored in the comparisons which creates a gap in the study.

The European Commission has declared that Toy disguise costumes must fulfil both the harmonised EN 71-standards, and the standard EN 14682 “Safety of children's clothing - Cords and drawstrings on children's clothing – Specifications” which is harmonised under the General Product Safety Directive and which does not exclude Toy disguise costumes. This fact has not been considered in the study.

In connection with the harmonisation of EN 71-1 the European Commission has published a notice regarding “Suction cups on projectiles intended for children over 3” to clarify that they do not consider the testing methods given in EN 71-1 to be sufficiently stringent. This fact has not been considered in the study.

The specification of the order of testing and testing on different samples is different in the standards in the ISO-EN-ASTM standards but this has not been mentioned in the study:

	ISO 8124-1	EN 71-1	ASTM F963
Order of testing	Not mentioned	In the order specified in the requirements.	In any order except where specified
Testing on new samples	If a clamp or similar has materially affected the toy a new sample shall be used for the subsequent tests	If a clamp or similar has materially affected the toy a new sample shall be used for the subsequent tests	Each test may be conducted on a different toy unless otherwise specified

The standards have different specifications for the use & abuse/foreseeable use tests and this has been addressed in the study (apart from the washing requirement mentioned further down). Age-grading has also been addressed since in the ASTM-standard the test forces and drop heights vary with the intended age group which is not the case in EN 71-1 and ISO 8124-1.

However, the ICTI study does not discuss the fact that the specifications of when the tests are to be applied also differ between the standards:

	ISO 8124-1	EN 71-1	ASTM F963
When are normal use and use & abuse (foreseeable use) tests applied?	<p>All toys shall be subjected to unspecified “normal use tests” (see 4.1). All toys shall also be tested in accordance with the relevant normal use tests in 5.1 to 5.23. After the normal use tests, toys <u>intended for children under 96 months</u>, unless otherwise stated, shall be tested in accordance with 5.24 for reasonably foreseeable abuse. After undergoing each of the appropriate tests, the toy shall still continue to conform to the relevant requirements of Clause 4.</p> <p>If the toy is intended for an age range that spans more than one age group, the toy should be subjected to the most severe test.</p>	<p>All toys are tested in accordance with the requirements in section 4 of the standard. <u>If the toy is intended for children under 3 years</u>, the tests in section 5 shall also be applied. In certain cases the tests in section 5 are used also for assessment of the requirements in section 4 (e.g. mouth-actuated toys and expanding material)</p>	<p>All toys shall be subjected to the tests in 8.5 – 8.10 (where 8.5 is unspecified “normal use tests”). The tests in 8.11 onwards shall be applied only if this is specified in section 4 of the standard.</p> <p>According to 8.6 the abuse tests in 8.7 – 8.12 shall only be applied to toys <u>intended for children of 96 months or under</u> unless otherwise specified (in chapter 4).</p> <p>If the toy is intended for an age range that spans more than one age group, the toy should be subjected to the most severe test.</p>

One effect of the different approaches in the standards is that toys are assessed for e.g. sharp edges, sharp points and protrusions after use & abuse testing according to ISO and ASTM, but in their “as-received” state according to EN 71-1.

In the US-EU comparison, a bite-test is mentioned/recommended by the ICTI-study. It is unclear what bite-test this recommendation refers to. The only bite-test that is presently available is the one specified in 16 CFR §1500.51 (c). However, this bite-test is not part of ASTM F963 and CPSC does not use the bite test specified in the CFR, as a result of a court case (Clever Idea Co., Inc. v Consumer Products Safety Commission, 385 F. Supp. 688 (E.D. N.Y. 1974)) that questioned the appropriateness of this test.

It is not specifically mentioned in the comparisons that ASTM F963 and ISO 8124-1 include a specification that toys labelled as washable shall be subjected to washing in accordance with a specified method and that there is no corresponding requirement in EN 71-1.

The different approach regarding application of the “small-parts” warning is not addressed in the study. According to the ASTM- and ISO-standards, the warning

shall only be applied to toys intended for children between the age of 3 and 6 years if the toy contains an as-received small part. In the EN-standard, the interpretation is that the warning is required if a small part can be released during the relevant tests of section 5 (tests for toys intended for children under 3 years) unless the toy, on account of its function, dimensions, characteristics, properties or other cogent grounds, is clearly unsuitable for children under 36 months.

5.2. Heavy metals

The requirements for heavy metals in the three standards have been compiled in a separate table (see 3.5). The table was obviously drafted before the introduction of the CPSIA and also before the content of the new TSD was known.

The following values should be corrected:

- Lead in accessible toy material (use and abuse testing and accessibility probe): Total content max 300 ppm (CPSC)
- Lead in paint/surface coatings: Total content max 90 ppm (CPSC)

The new value of 90 ppm is mentioned in the US-EU comparison which shows that this was made at a later stage than the table for heavy metals.

The table gives the impression that requirements for migration of certain elements for both modelling clay and finger paints can be found in EN 71-3 which is not the case. The requirements for finger paints come from a separate standard EN 71-7 which includes also other requirements than those for migration of certain elements.

In the table it is not mentioned that under the new Toy Safety Directive

- 11 new elements are added to the existing 8
- Limit values for the existing 8 elements are changed
- Limits are set for three categories of toy material

Finally it is not mentioned that

- for electric and electronic toys, further requirements regarding elements may apply through directive 2002/95/EEC (ROHS) which limits the use of lead, cadmium, mercury, chromium 6 and PBB and PBDE to 0,1 % by weight in homogenous material
- CPSIA may lower the limit for total content in toy accessible toy materials to 100 ppm in 2011
- toys and other products with a high total content of lead (but low migration values) could be banned based on either environmental EU-legislation or national environmental legislation

5.3. Acoustics

In the US-EU and the EU-US comparisons a table SGSFM 2007-003 is mentioned but this table has not been made available for the peer-review. However, the factual comparison of the standards seems to be correct with one exception: The measurement distance for close-to-the-ear toys is not 2,5 cm in EN 71-1 when LpC_{Peak} (C-weighted peak sound pressure) is measured. This is important to note since it should affect any conclusions and recommendations.

It has been noted in the ISO-EN-ASTM comparison (but not in the other comparisons) that in EN 71-1 there is a requirement for marking of toys, stating that if the C-weighted peak emission sound pressure level exceeds 110 dB the toy shall carry a warning. This requirement for a warning is not present in ASTM F963.

5.4. Hygiene

As mentioned under 5.1 the difference between the standards with regard to washing has not been addressed.

The comparison concludes that there are no specific microbiological requirements in the EU for toys. It is correct that only under directive 767/768/EEC Cosmetics are specific microbiological requirements mentioned. However, EN 71-1 contains a requirement (in 4.1) that toys and material used in toys shall be visually clean and free from infestation. In addition, the present Toy Safety Directive includes a general requirement for hygiene stating that "Toys must be so designed and manufactured as to meet the requirements of hygiene and cleanliness in order to avoid any risk of infection, sickness and contamination" and this requirement is extended in the new Toy Safety Directive to also specify that toys intended for children under 36 months shall be possible to clean and, for textile toys, be washable unless they contain a mechanism that can be damaged.

Therefore, toys including liquid are often tested to microbiological requirements although no harmonised standard exists.

5.5. Toys and food

The requirements for toys in contact with food are mentioned in the US and it is concluded that it is very hard to compare the requirements related to food between the US and EU.

The approach in the US is to make reference to the legislation (21 CFR) in the standard. In the EU we would instead have a reference in the directive (generic or specific). The EU legislation is based on migration into food-stuff while as the US focuses on the content after subjection to solvents. These two approaches makes

a comparison difficult and it is not possible to claim compliance with EU-legislation after having tested according to US-requirements and vice versa.

EC Regulation 1935/2004 on materials and articles intended to come into contact with food, should have been mentioned and perhaps also European standards such as “EN 14372 Child use and care articles - Cutlery and feeding utensils - Safety requirements and tests”.

In addition, the US Food, Drug and Cosmetic Act from 1938 FDA basically states that “confectionery that has partially or completely imbedded therein any non-nutritive object is adulterated”. This Act is the basis, for example, for a ban on chocolate surprise eggs. It relates partly to the requirements in the new Toy Safety Directive for toys in food, but neither of these have been mentioned in the comparison.

5.6. Electrical toys

This is an area where quite a lot of effort has been made in the ICTI comparison US-EU to explain which requirements in the F963-08 have corresponding requirements in EN standards. One important difference is that in EN 62115 and the Toy Safety Directive, the supply voltage is limited to 24 Volts while in the US it is permitted to be 120 Volts.

No comparison has been made in the opposite direction (comparison of EN 62115 Electrical toys to requirements in F963) and therefore there are automatically quite a few gaps in the comparison.

Electrical toys in Europe may also be covered by Directive 2004/108/EC for EMC (Electromagnetic Compatibility) and, if radio controlled, 1999/5/EC for R&TTE (Radio equipment and telecommunications terminal equipment). In addition, transformers and battery chargers may be covered by Directive 2006/95/EC (Low voltage).

Batteries in toys are covered by Directive 2006/66/EC (Batteries) and all electrical and electronic toys are covered by Directive 2002/96/EC WEEE (Waste Electrical and Electronic Equipment) and Directive 2002/95/EEC ROHS (Restriction of Hazardous Substances in Electrical and Electronic Equipment).

In EN 62115 requirements are given for:

- LED – Light emitting diodes (reference to 60825-1:1993 Descriptors, Lasers, Light-emitting diodes)
- Safety of Batteries (reference to EN 62133 Secondary cells and batteries containing alkaline or other non-acid electrolytes)
- Temperature rise during normal use and short-circuiting

- Transformers for toys (reference to IEC 61558-2-7 Safety of power transformers, power supplies, reactors and similar products - Part 2-7: Particular requirements and tests for transformers and power supplies for toys)
- Creepage - and clearance distances
- Dual power supply (battery + external supply)

There are no requirements in ASTM 963-08 that cover the same items.

Directive 2005/32/EC EuP (Eco-design of Energy-using Products) covers transformers and specifies a maximum current-draw which requires a special type of transformer. This will call for changes in EN 62115, such that these types of transformers can fulfil the standard.

5.7. New TSD

In some cases requirements deriving from the new Toy Safety Directive are mentioned but the comparison can not be considered to have covered the changes in standards and legislation that will follow from the new directive. For example, the new provisions for CMRs in toys are not mentioned in the comparison. For more information on the requirements in the new TSD see 8.1.2.

5.8. Hazardous substances

This is a complex area to deal with in a comparison since the requirements are mainly found in various pieces of legislation and not in standards.

The European system is generally speaking based on the Toy Safety Directive in which reference is made to:

- REACH Annex 12 (which incorporates the repealed directive 76/769/EEC regarding restrictions on the marketing and use of certain dangerous substances and preparations)
- The Directives on Dangerous substances (67/548/EEC) and Dangerous preparations (1999/45/EC) which will both be replaced by the new EC regulation No 1272/2008.

Annex 1 of 67/548/EEC contains a list of CMRs and other classified substances. The preparations directive does not include such a list but presents a way of how to calculate if the preparation is classified as dangerous (mathematical or through animal testing).

The two mentioned directives will be replaced by the new EC regulation 1272/2008 on classification, labelling and packaging of substances and mixtures. Through this regulation the GHS-system is introduced (Globally Harmonized System of Classification and Labelling of Chemicals) which will be fully implanted

by 2015. The old Annex 1 of 67/548/EEC will become a new annex in regulation 1272/2008.

In Europe there are a few specific chemical standards for toys including:

- EN 71-4 for Toy Chemical Experimental sets
- EN 71-5 for Other chemical toys
- EN 71-7 for Finger paints
- EN 71-9 to 71-11 for Organic chemical compounds

Products covered by EN 71-5 and 71-7 in Europe would be covered by the Labelling of Hazardous Art Material Act (LHAMA) and ASTM D 4236 Standard Practice for Labeling Art Materials for Chronic Health Hazards.

5.9. Planned amendments to standards

Since the comparison has been made to different versions of the three standards it is of some importance to understand which amendments that have been published after the ICTI-study was initiated and also to have a brief overview of amendments that can be expected within the coming 12 months. The publication of new amendments will automatically lead to unavoidable gaps in the comparison.

5.9.1. EN 71-1

In one of the comparisons, EN 71-1:2005+A4:2007 is used. The following additional amendments have been published per October 15, 2009:

- A5 regarding "Small balls"
- A6 regarding "Various changes" (e.g. new test for "wires likely to be bent", deletion of exception for "drinking toys" from requirements for hemispherical shaped toys, revised tip-over test)
- A7 regarding warnings (addition of the word "Warning" in front of warnings, inclusion of the age-warning symbol in EN 71-1, clarification of where warnings shall be placed, deletion of specific "small balls-warning", new warning for high rocking horses)
- A8 regarding "Magnets"
- A9 regarding "Various issues" (e.g. wider use of glass in toys, clarification that "tightly packed stuffed components" can be small parts)

Amendments that can be foreseen to be published within 12 months:

- A10 regarding "Cords" (extensive changes to definitions, requirements and test methods)
- A11 regarding "Suction cups on projectiles" (aligning the standard with the Commission decision regarding higher force in tension test)
- A12 regarding "Bicycles, scooters and ride-on toys" (extensive changes regarding e.g. new speed-limitation for electrically driven toys, new braking requirements, and new warning requirements)

- A13 regarding pompoms (which however is unlikely to be published within 12 months)
- A14 regarding “Various issues” (e.g. clarification regarding requirements for suction cups in toys for children under 3, and changed test method for expanding toys)

5.9.2. ISO 8124-1

In the ISO-EN-ASTM-comparison, ISO8124-1:2000+A1+A2 is used. The consolidated version 8124-1:2009 has since been published and includes also A3 which regards requirements for toy scooters.

5.9.3. ASTM F-963

In the ISO-EN-ASTM-comparison, ASTM F963-07(ε1) is used. Since then, F963-08 has been published which includes the following major changes:

- Requirements related to “Jaw entrapment”
- Revised requirements for “Folding mechanisms and hinges”, and “Locking mechanisms”
- Exemption of “sports balls” from the requirements for Yo Yo elastic tether toys
- Impaction hazards caused by toys intended for children between 18 and 48 months and that are in the shape of nails, screws and bolts
- Amendment of the requirements for sound-producing toys
- Revised requirements for magnets
- Deletion of the requirements for Toys chests

6. DETAILED GAP ANALYSIS AND REMARKS ON THE COMPARISONS

Since there is not one compiled ICTI-proposal for a harmonised global toy safety standard, comments are given below on each part of the ICTI-comparison.

Apart from the larger gaps in the study which are mainly caused by the one-way comparison approach and are described under point 5, smaller gaps can be identified in the various parts of the ICTI-study for example due to:

- Lack of understanding of the European system (e.g., there is no merit in proposing that EN 71-1 is changed to align with ASTM in cases where the EN standard has recently been revised on that particular point due to a formal objection from a member state)
- Conflicting recommendations in different parts of the ICTI-comparison
- Misunderstanding/misinterpretations on a detailed level
- Pure oversight

Examples of such gaps are pointed out in the sections below. In ANNEX I, an example of how a combination of the most stringent requirements in the referenced standards and legislations could be outlined in a part of a standard is given for “Asphyxiation hazards”.

6.1. ASTM F963-07e1/EU Toys Standards

Hazardous substances (F963-08, clause 4.3.1)

Reference is made to 76/768/EEC but should be to 76/769/EEC. However, reference should also have been made to the directives on Dangerous substances (67/548/EEC) and Dangerous preparations (1999/45/EC) since they specify requirements for toys which are a hazardous substance or preparation in themselves.

Stuffing materials (F963-08, clause 4.3.7)

It is not correct to state that there are no corresponding requirements in the EU toy standards. There are requirements in EN 71-1, clause 4.1 (...visually clean and free from infestation) and in 5.2 (Soft filling materials shall not contain any hard or sharp contaminants such as metal particles, nails, needles and splinters.).

Phthalates (DEHP) (F963-08, clause 4.3.8)

It is stated that the test methods are significantly different in the US and in Europe. On July 27, 2009 CPSC supplied a revised test method and therefore the testing methods are now in line.

Sound producing toys (F963-08, clause 4.5)

The measuring distance for close-to-the-ear toys in EN 71-1 is not 2,5 cm. It is 50 cm and therefore there is a major difference in the requirements for impulse sound in F963 compared to EN 71-1.

Small object (F963-08, clause 4.6)

The interpretation of the requirements in EN 71-1 is that fibrous filling materials are exempted from the small parts requirement. Regarding “adult assembly” it is not correct that a warning is required according to EN 71-1 on products intended to be assembled by an adult. An indication in the instructions is sufficient.

Small parts warning (F 96-08, clause 4.6.3)

It is not correct that EN 71-1 requires that all toys up to 14 years shall carry a warning if they can release small parts. This is not required if the toys is clearly not intended for the age group under 3 years.

One important difference has been overlooked: The F963-requirement for a warning applies to “as-received” small parts but the EN-requirement for a warning is applicable if small parts can be detached during applicable tests.

Wires or rods (F963-08, clause 4.10)

It is not correct that only one test cycle is required according to EN 71-1. All wires intended to be bent (e.g. those used for stiffening or retention of form in toys) shall be subjected to 30 test cycles.

Folding mechanisms and hinges (F963-08, clause 4.13)

The comparison does not highlight the fact that the F963-requirements do not apply to truck bodies, toy earth moving machinery, and similar toys. This seems to be an important difference in comparison to EN 71-1.

Folding mechanisms (F963-08, clause 4.13.1)

These are complex requirements to compare and it seems as if not all differences have been picked up in the table. For example, EN 71-1 has a 140 mm limit and ASTM refers to the hip-breadth of the intended age group. F963 has a 45 N test of the locking device which is not present in EN 71-1 and F963 lacks the requirement for one main and one secondary locking device on toys that can fold down over the child.

Cords, straps and elastics (F963-08, clause 4.14)

It is not mentioned that EN 71-1 has an additional requirement compared to ASTM for a minimum thickness of 1,5 mm of cords.

An amendment regarding "cords" to EN 71-1 is expected to be published during 2010 and it is therefore not useful to make a detailed analysis of the present differences.

Self-retracting pull cords (F963-08, clause 4.14.2)

It is not correct that the requirements are the same since in F963 they apply up to 18 months and in EN 71-1 up to 36 months.

Cords on toy bags (F963-08, clause 4.14.5)

It is not correct to state that the requirements are the same. The F963-requirement applies only to children up to 18 months and the EN 71-1 requirement applies to all children up to 14 years.

Sideways stability (F963-08, clause 4.15.2)

It is not entirely correct to state that there are no fore and aft stability requirements in EN 71-1. Fore and aft stability is mentioned in the third indent in 4.15.1.4 of EN 71-1:2005+A9:2009 which makes it clear that the expression "most onerous position" in EN 71-1 indicates that the requirements apply both to sideways stability and to fore and aft stability.

The comparison does not highlight that in F963 there is no indication on how to test toys intended for more than one child.

Overload requirements for Ride-on toys (F963-08, clause 4.15.5)

It is not correct that the load in EN is 25 kg for all under-three toys. This applies only if the toy carries a specific warning (“not intended for 36 months and over”).

Wheeled ride-on toys (F963-08, clause 4.15.6)

It is not correct that the dynamic tests are the same in F963 and EN 71-1. Furthermore, the test specifications in EN 71-1 are much more detailed than those in F963 for this test.

Confined space (F963-08, clause 4.16)

It is not correct to say that EN 71-1 does not mention the area of each ventilation hole. EN 71-1 does require a certain area but does not permit only one opening.

The requirements for “toys that enclose the head” (clause 4.16.3 in F963-08) are not the same since EN 71-1 allows either two ventilation holes or one larger.

Wheels, tires and axles (F963-08, clause 4.17)

It has not been mentioned anywhere in the comparison that EN 71-1 includes a requirement for e.g. a free-wheeling mechanism or foot rests on tricycles that are equipped with a handle for pushing the child.

Accessible clearances for movable segments (F963-08, clause 4.18.1)

It has not been pointed out that EN 71-1 includes a requirement that wheels directly propelled by pedals shall not have holes or slots with a width greater than 5 mm.

Chains or belts for ride-on toys (F 9653-08, clause 4.18.3.2)

EN 71-1 includes an additional requirement which is that it shall not be possible to remove the chain-shield without the use of a tool.

Inaccessibility of mechanisms (F963-08, clause 4.18.4)

The term “insufficient power” is explained in A.12 of EN 71-1 and corresponds to the requirement in F963-08 which refers to “..present a pinch or laceration hazard”.

Pacifiers (F963-08, clause 4.20)

It is not correct to state that there are no requirements for toy pacifiers in EN 71-1 since they will be covered by the requirements for toys intended for children under 3 years. However, it is correct that there is no specific toy-pacifier requirement for max 16 mm length.

Projectile toys (F963-08, clause 4.21)

There are a few important differences which have not been noted, e.g.:

- In EU (and EN 71-1) “slings and catapults” shall not be considered as toys

- In EU a Commission decision has been made that suction cups on projectiles shall be tested with the torque test and a 90 N tension test (a proposal for amendment is made in prA11 to EN 71-1)
- There is an exclusion also in EN 71-1 for “Ground based vehicular toys propelled along a track” in A.22

The reference to EN 71-1 prA9 in the comparison table is wrong.

Battery operated toys (F963-08, clause 4.25)

See comments in 5.6.

Crib gyms (F963-08, clause 4.26.3)

The EN 71-1 requirements regarding baby gyms (legs and removable components) in clause 5.8 could possibly be of relevance here.

Stroller and carriage toys (F963-08, clause 4.28)

It is not entirely correct that EN 71-1 does not specify a warning requirement for stroller and carriage toys. The warning requirement in EN 71-1 for “toys intended to be strung across...” applies to “cradles, cots, perambulators etc”.

Art materials (F963-08, clause 4.29)

See comments in 5.8.

Toy gun marking (F963-08, clause 4.30)

The comparison is based on ASTM F963-08 and a UK regulation. It is not made clear that marking of toy guns is not covered in EU Toy legislation or standards.

Balls (F963-08, clause 4.34)

An important difference has been left without comment: The requirements in EN 71-1 apply to ball-shaped objects while as in F963-08 they apply to balls that have a certain function. The EN 71-1 was modified after a formal objection had been made to the standard.

Pompoms (F963-08, clause 4.35)

It is not correct that Pompoms are considered to be small balls in EN 71-1. Pompoms are currently exempt from the requirements if EN 71-1. The issue is however under discussion (see prA13 to EN 71-1).

Hemispheric-shaped objects (F963-08, clause 4.36)

The comparison does not mention that EN 71-1 does not have an exclusion for objects intended to hold liquids in products appropriate for children at least 2 years old (e.g. pots and pans).

Furthermore, it should have been noted that the exclusion for “objects intended for drinking” was deleted from EN 71-1 as a result of a formal objection.

Yo Yo elastic tether toys (F963-08, clause 4.37)

In fact, the YoYo-balls have been banned in France, UK and Luxembourg and the EU Commission stated in 2004 that this ban was justified and therefore the ban in practice applies in the whole of EU. Requirements for YoYo-balls are proposed in prA10 to EN 71-1).

Magnets (F963-08, clause 4.38)

There are some important differences between the requirements in F963 and EN 71-1 which have not been noted:

- The “use and abuse tests” are different since F963 includes a cycling test and EN 71-1 includes a specific magnetic tension test and also applies the soaking test more widely than for other toys
- Hobby and craft items (if they are toys) are not excluded in EN 71-1 (only magnetic/electrical experimental sets). The required warning on such toys are not identical in the two standards

6.2. EU Toys Standards/ASTM F963-07e1

Several of the gaps that have been mentioned under 6.1 apply also here. Some of the gaps pointed out below are additional.

Material (EN 71-1, clause 4.1)

It is not mentioned that F963 includes specific provisions for reprocessed material

Assembly (EN 71-1, clause 4.2)

In F963 specific safety labelling is required on toys intended to be assembled by and adult.

Flexible plastic sheeting (EN 71-1, clause 4.3)

Shrink film is already exempted from EN 71-1 in clause 6 of the standard.

Folding and sliding mechanisms (EN 71-1, clause 4.10.1)

This is a complex area that requires a more detailed comparison to be made. Refer to comments made under 6.1 referring to clause 4.13 in F963-08.

Mouth-actuated toys (EN 71-1, clause 4.11)

It is not clear from the comparison that F963-08 only covers the requirement in EN 71-1 clause 4.11 c). Addition of soaking test and requirements for mouth-actuated projectile toys will therefore not be enough for alignment of the standards.

Toys which a child can enter (EN 71-1, clause 4.14.1)

It should be mentioned that “Toy chests” have been deleted from ASTM F963-08 and are now found in ASTM F 834-894. However, the deletion of the Toy Chest

requirements from F963 has not been accepted by the CPSC and therefore they may be included again at a later stage.

Toy scooters (EN 71-1, clause 4.15.5)

Reference could have been made to ASTM F 2264-09 “Non-powered scooters”.

Acoustics (EN 71-1, clause 4.20)

As pointed out previously, it is a misunderstanding that the measuring distance for close-to-the-ear toys in EN 71-1 is 2,5 cm. It is 50 cm and therefore there is a major difference in the requirements for impulse sound in F963 compared to EN 71-1.

It should be mentioned that F963 does not require a warning on toys which have a C-weighted peak emission sound pressure level exceeding 110 dB.

General requirements for toys intended for children under 3 (EN 71-1, clause 5.1)

It has not been pointed out that the EN 71-1 definition of paper (400 g/m² or less) is not present in F963 nor that books are excluded from F963.

Plastic sheeting (EN 71-1, clause 5.3)

The EN requirements seem to have been misunderstood. Clause 4.3 (plastic sheeting) in EN 71-1 applies to toys for all age groups if it has no backing. In clause 5.3 additional requirements are given for decals and adhesives (in toys for children under 3) and in clause 6 requirements for plastic in packaging is given (for all toys regardless of intended age group).

Cords (EN 71-1, clause 5.4)

Straps are not specifically excluded from the EN 71-1 definition of “cord”. For cords, prA10 of EN 71-1 will change and clarify many of the requirements, definitions and test methods.

Shape and size of certain toys (EN 71-1, clause 5.8)

The comparison does not seem to recognise that the requirements in 5.8 of EN 71-1 correspond not only to those in F963 for Teethers and teething toys (4.22), Rattles (4.23), and Squeeze toys (4.24) but also to the F963 requirements for Certain toys with spherical ends (4.32).

It should, however, be noted that in F963-08, toys with nail, screw and bolt shapes intended for children between 18 and 48 months are included.

Toys comprising monofilament fibres (EN 71-1, clause 5.9)

It has not been pointed out that the EN 71-1 requirement for monofilament fibres has nothing to do with self-retracting cords. There is no corresponding requirement in F963 to the warning requirement in EN 71-1 on toys with monofilament fibres with certain characteristics.

Small balls (EN 71-1, clauses 4.22 and 5.10)

It is not correct to state that the requirements are the same since in EN 71-1 a ball is defined by its shape and not its function, and since EN 71-1 does permit small balls on cords if they pass the specific test for such balls.

6.3. ISO 8124-1 - EN71-1 - ASTM F963

Generally speaking, this comparison contains rather few recommendations for changes. The main recommendations seem to be made in the two comparisons between the US and the EU-standards.

Furthermore, it should be noted that the recommendations made by ICTI in this comparison are not always in line with the recommendations made in the two other comparisons. In the ISO-EN-US comparison the recommendation seems to be that there is no reason to limit the requirements for edges and points to 96 months. In the US-EU comparison it was stated that 96 months would be appropriate.

In addition, in the EU-US comparison, it was suggested that the requirement in EN 71-1, stating that all points with less than 2 mm diameter are considered to be potentially hazardous points, should be deleted from EN 71-1. In the ISO-EN-ASTM comparison it is suggested that this requirement is added to F963.

Finally, in the US-EN comparison, ICTI recommends that ear-phones/headphones should not be exempted in F963, but in the ISO-EN-ASTM comparison, the recommendation is to exempt these categories from EN 71-1.

Many of the notes made under headings 6.1 and 6.2 apply also to the ISO-EN-ASTM comparison.

Reasonably foreseeable abuse (ISO 8124-1, clause 4.2)

The comparison does not show that the application of these tests is different in the three standards (in addition to the tests and test parameters being different). See comments in the first table under 5.1 of this report.

Small parts (ISO 8124-1, clauses 4.4.1 and 4.4.2)

It has to be presumed that the comment to add the soaking test is in addition to the proposals in the table "Use and Abuse tests" where the soaking test is not mentioned.

The EN 71-1 requirement regarding "metal points and wires with a cross section of 2 mm or less" is not mentioned here, nor is the interpreted EN exemption of fibrous filling materials.

It should be emphasised that the warning requirement in 8124-1 and F963 regard “as received” small parts while in EN 71-1 it is foreseen that warnings are applied to toys with “detachable” small parts.

Squeeze toys, rattles and certain other toys (ISO 8124-1, clause 4.5.1)

The rationale for EN 71-1 referring to “children too young to sit up unaided” is that children can accidentally roll over on their stomach and then not be able to roll back by themselves. If the child has e.g. a rattle with a shaft in its mouth when it rolls over on the stomach it could suffocate.

The comparison with F963 should have included a reference to the requirements in clause 4.32 of F963.

Small balls (ISO 8124-1, clause 4.5.2)

This part of the comparison is obsolete since new requirements for small balls were included in EN 71-1 through A5 in 2008.

Pompoms (ISO 8124-1, clause 4.5.3)

A proposal to add requirements for pompoms to EN 71-1 can be found in prA13.

Marbles (ISO 8124-1, clause 4.5.7)

The age warning symbol is applicable in ISO 8124-1 too (not only in EN 71-1).

Edges (ISO 8124-1, clause 4.6.1 and 4.6.2)

There seems to be some confusion here. Clause 4.6.1 in ISO 8124-1 is not a requirement but an exemption from the requirements.

Cords, strings and lines for flying toys (ISO 8124-1, clause 4.11.7)

“Strings” are not mentioned in addition to “cords” in EN 71-1 due to the fact that the definition of “cord” includes “strings”.

Stability of ride-on toys and seats (ISO 8124-1, clause 4.15.1)

It should be noted that EN 71-1 has specific provisions for toys intended to bear the mass of more than one child at the time.

It should be noted that in EN 71-1 an exemption is made for toys intended for children over 36 months if their feet are available for sideways stability and they can reach the ground. This exemption does not apply to toys which are not propelled by a child.

Overload requirements for ride-on toys and seats (8124-1, clause 4.15.2)

It is not mentioned that EN 71-1 has specific requirements for toys intended to bear the mass of more than one child at the time (simultaneous loading of every sitting or standing area is required).

Braking (ISO 8124-1, clause 4.20)

The term “free-wheeling” is causing some confusion in the comparison of the standards. Compare for example the requirement in EN 71-1 that “Tricycles provided with an attached handle used for pushing the child, shall be constructed in such a way as to prevent entrapment of the child’s feet in the pedals etc. while being pushed (e.g. free-wheeling mechanism or foot rests). See also next comment.

Toy bicycles (ISO 8124-1, clause 4.21)

It should be pointed out that the definition of “Toy bicycle” is different in ISO 8124-1 and EN 71-1 since in EN 71-1 the definition covers only “free-wheeling toy bicycles” (i.e. bicycles “which do not have a fixed transmitted drive”).

It is not correct to state that the requirements for brakes are the same since in EN 71-1 two independent braking systems are required.

Toys containing a heat source (ISO 8124-1, clause 4.23)

This is obsolete since in A6 to EN 71-1, the reference to light bulbs was deleted and all electrical requirements are in EN 62115.

Liquid-filled toys (8124-1, clause 4.24)

The requirement in ISO 8124-1 is that there shall be no leakage of the contents which would result in a potential hazard. The requirement in EN 71-1 is simply “No leakage”. Since EN 71-1 and ISO 8124-1 contain only Mechanical and physical requirements, there is no possibility to add microbiological requirements.

Percussion caps (ISO 8124-1, clause 4.27)

It should be noted that the EN 71-1 requirement for the “indication regarding which make and model of percussion caps”, has been considered important from a legal point-of-view.

Toy scooters

Requirements for toy scooters were added to ISO 8124-1:2009 which had not been published when the comparison was made.

6.4. Flammability

No gaps relevant for safety have been found in this comparison.

6.5. Heavy Metals

See 5.2.

6.6. Use and Abuse tests

See also 5.1.

- In the various comparison tables the addition of the EN 71-1 “Soaking test” is recommended in several places. However, it is not mentioned in the table which covers only the “Use and abuse tests”
- The washing requirements that are present in F963 and ISO 8124-1 (but not in EN 71-1) for certain toys are not mentioned in this table

7. COMMENTS ON THE RECOMMENDATIONS MADE BY ICTI

It is difficult to make an analysis of recommendations that appear in six different documents and that in some cases are not aligned. The following comments are therefore restricted to point out, in a non-exhaustive manner, which of the recommendations in the US-EN comparison would need further consideration to ensure that they are workable and give a required level of safety that is acceptable from all viewpoints. When possible, conflicting recommendations have been pointed out.

It should be noted that it is often not sufficient to conclude “use ASTM-requirements” or “use EN-requirements” since often the standards will have different specifications regarding which age-groups are covered, and for which toys foreseeable use/abuse tests are foreseen etc. Thus, when implementing a proposal to replace requirements in one standard with those from another, more detailed considerations need to be made.

In some cases requirements are explicitly included in the European directive or in the Code of Federal Regulations (CFR) and may therefore not be possible to change without revision of the directive or the CFR.

It should also be emphasized that important gaps have been caused by the fact that no “reverse approach” has been taken, in which requirements in existing harmonized EN toy safety standards are compared with both ASTM F 963 and ISO 8124 standards. A reverse approach shows clearly that major gaps exist (see for example 5.6 regarding requirements related to electrical toys).

ASTM - Detail	ICTI-recommendation	Comment
<i>Flammability</i>	<ul style="list-style-type: none"> - Materials other than textiles – ASTM F963 - Pile surface – EN 71-2 - General textile fabric – ASTM F963 - Specific Products [1) – 4]) – EN 71-2 	Since all types of material would be covered by the three first indents, it is questionable if, in addition, tests need to be specified for specific products made of these materials.

ASTM - Detail	ICTI-recommendation	Comment
<p><i>Hazardous substances</i></p> <p><i>Manufacturing and Packaging of Food</i></p> <p><i>Indirect Food Additives</i></p> <p><i>Toys in Contact with Food</i></p> <p><i>Ceramicware, Lead, and Cadmium Contamination</i></p> <p><i>Cosmetics</i></p>	<p>No specific recommendations</p>	<p>These are all areas where harmonisation would be very complex due to variety of directives and legislation that is applicable.</p>
<p><i>Paint and Similar Surface-Coating Materials</i></p>	<p>Add total lead requirement to EU requirements</p>	<p>It is not evident that adding requirements for total lead content would enhance the safety of children since requirements for exposure to lead (migration) are already in place.</p>

ASTM - Detail	ICTI-recommendation	Comment
<i>Other elements in surface coating materials</i>	<ul style="list-style-type: none"> - 19 chemicals would be tested for the New EU Toys Directive and which is suggested to add to US requirements - As it is often easier to test for all chemicals at one time it is recommended that the results for testing TOTAL metals can be used to determine that sample also complies with soluble requirements provided that the result is below the soluble limit. (This avoids duplicating the material preparation and is based on the digestion for total metals being more onerous than for soluble) 	It is not only 11 new elements. There is also the fact that the limit-values in the new TSD are different for the three different categories of material that are defined in the new TSD
<i>Microbiological degradation in: Cosmetics, Liquids, Pastes, Putties, Gels, and Powders and Water</i>	No specific recommendation	US and EU pharmacopoeia methods could be considered
<i>Stuffing Materials</i>	<ul style="list-style-type: none"> - Suggest adding to EN 71-1 requirement. - Except PA requirements may be too onerous for inclusion 	EU chemical requirements already apply also to stuffing materials.
<i>Electrical/Thermal Energy</i>	No specific recommendation	Observe that in Europe electric toys may not be operated at higher nominal voltage than 24 V
<i>Sound-Producing Toys</i>	<ul style="list-style-type: none"> - It is not necessary to have exemption for those earphones requirement/ <i>These should be exempted in EN 71-1</i> - For close-to-ear toys, 2.5 cm would be more precise as actual use of the toys - It is not necessary to have exemption for those squeeze toys since it would also damage to the 	<p>Different recommendations are given in different tables.</p> <p>From a technical point of view a measuring distance of 50 cm is less sensitive for deviations from the intended position than a distance of 2,5 cm. The results can be corrected using accepted conversions.</p>

ASTM - Detail	ICTI-recommendation	Comment
	ears of children/ <i>Squeeze toys should be exempted as in ISO</i>	
<i>Small parts</i>	No Change	Changes would be needed since the exemptions are not identical (e.g. fibrous filling material, tightly packed stuffed components, CDs, paper)
<i>Use and abuse testing – general</i>	Recommendation can also be found in SGSCT 2009-004	The referenced document has not been made available but the table “Use and abuse test” has. Apart from harmonizing the forces, drop heights and tests, there is also a need to study when the tests shall be applied (types of products, age groups etc). In some places “bite-test” and “soaking test” have been recommended but these are not included in the table for “Use and abuse test”
<i>Toys that are intended to be assembled by an adult</i>	No change	The requirements are not aligned at present. A change is needed since no labelling is required by EN
<i>Mouth-Actuated Toy</i>	- Adding Soaking test, for Mouth-actuated toys to ASTM F963. Also adding mouth-actuated projectile toys requirement to ASTM F963. Bite test for the mouth-actuated toys is suggested.	The requirements of the new TSD need to be considered since it specifies that no detachable parts are allowed on a mouth actuated toy, regardless of whether or not those parts are intended to be put in the mouth during play

ASTM - Detail	ICTI-recommendation	Comment
<i>Small parts warning</i>	Suggest ASTM F963 to modify the labeling for all 36 months and up toys (3 – 14 years)	EN 71-1 does not require warning on all toys up to age 14 years. More relevant to include an upper age limit in EN 71-1. The main difference is that F963 specifies that the warning is needed only if there are “as-received” small parts
<i>Potentially hazardous sharp metal and glass edges</i> <i>Potentially hazardous sharp points</i>	- 96 months would be sufficient. It is not necessary to change in ASTM F963/ <i>No reason to limit to 96 months</i> - Further assessment could be clearer in F963	Another example of conflicting recommendations in different tables
<i>Functional sharp edges</i> <i>Functional sharp points</i>	- 48 months would be better/ <i>Should harmonise at 36 months</i> - 96 months would be sufficient. It is not necessary to change in ASTM F963./ <i>No reason to limit to 96 months</i>	Conflicting recommendations in different tables
<i>Metal Toys</i>	No change	There is no requirement in EN to test if protections of edges can be detached
<i>Exposed Bolts or Threaded Rods</i>	No change	The requirements in EN 71-1 are less specific
<i>Projections</i>	96 months would be sufficient. It is not necessary to have change in ASTM F963/ <i>Extend to 14 years</i>	Conflicting recommendations in different tables
<i>Nails and Fasteners</i>	Add this specific clause to the EN 71-1.	Some of the requirements would fall under EN 71-1 clauses 4.7, 4.8 and 5.1. Ingestion hazard for under 3 covered in 5.1 and also sharp points (assessed after foreseeable use tests). Therefore, only any remaining gap needs to be covered by amending EN 71-1

ASTM - Detail	ICTI-recommendation	Comment
<i>Folding Mechanisms and Hinges</i>	-	The exclusions in ASTM F963 need to be considered
<i>Hinge-Line Clearance</i>		The term "hinge-line clearance" should be used in EN 71-1 in order to align with the definition in 3.21
<i>Cords, Straps, and Elastics in Toy</i>	<ul style="list-style-type: none"> - 18 months would be sufficient. - Cord length requirement shall follow ASTM F963 - Add head probe requirement requirements to EN 71-1. 	prA10 to EN 71-1 needs to be considered when proposing harmonized requirements
<i>Self Retracting Pull Cords</i>	The difference is caused by conversion of unit	F963 requirements apply only up to 18 months but EN requirements to 36
<i>Cords on Toy Bags Intended for Children Up to 18 Months</i>	-	The requirement in F963 applies to children up to 18 months. In EN it applies to all toy bags (14 years)
<i>Sideways Stability Requirements</i>	ASTM F963 provides much more details and precision for the stability testing method. Suggesting following ASTM F963 stability test.	In F963 there is no indication on how to test toys intended for more than one child.
<i>Overload Requirements for Ride-On Toys and Seats</i>	ASTM F963 provides much more details and precision for the overload testing method. Suggesting following ASTM F963 overload test.	EN-standard appears to be more detailed. EN covers testing of toys intended for more than one child.
<i>Wheeled Ride-on Toys</i>	No change	The requirements are not the same and EN is much more detailed. Changes would be needed.
<i>Confined Space Toys that Enclose the Head</i>	<ul style="list-style-type: none"> - ASTM F963 would be more details which is better than EN 71-1 - It is suggested to clarify the location of the ventilation holes (close to nose and mouth) and specify the area of each hole but not the total ventilation areas 	The opportunities to have one or two holes are reversed on the standard for these two requirements and should be aligned.

ASTM - Detail	ICTI-recommendation	Comment
<i>Closures</i>	Adding force gauge requirement/full-scale range requirements to EN 71-1.	Normally, only the accuracy of the equipment is specified
<i>Wheels, Tires, and Axles</i>	ASTM F963 would be better.	EN covers the ingestion hazard in 5.1 and the projection hazard in 4.9 (including a tension test for protective components).
<i>Accessible Clearances for Moveable Segments</i>	96 months would be sufficient. It is not necessary to change for the age concern.	Age limit needs to be considered. Related requirements can be found in several places in EN 71-1: Parts moving against each other (4.10), Transmission and wheel arrangements (4.15.1.6), Toy scooters (4.15.5.4 c). F963 does not have a requirement regarding holes in wheels directly propelled by pedals.
<i>Inaccessibility of Mechanisms</i>	<ul style="list-style-type: none"> - Insufficient power is difficult to be determined for testing. Therefore, suggest removing the term "insufficient power". - <60 months in ASTM F963 is sufficient and not necessary to change. 	Age limit needs to be considered. The "insufficient power" is explained in A.12 and corresponds to the F963 reference to "present a pinch or laceration hazard"
<i>Winding Keys</i>	<36 months in ASTM F963 is sufficient and not necessary to change	Winding keys in toys for children over 36 months are probably not very common but age limit needs to be considered

ASTM - Detail	ICTI-recommendation	Comment
<i>Coil Springs</i>	The major hazard of spring would be bear children mass items. Therefore, ASTM F963 would be sufficient.	EN 71-1 requirements for helical springs apply only if they can be subjected to a force of 40 N or more when in use. Not self-evident that only springs bearing the mass of a child are hazardous Terminology needs to be harmonized.
<i>Pacifiers</i>	<ul style="list-style-type: none"> - For toys pacifier, there is no specific requirement mentioned in EN 71-1 as well in the whole EU requirements. It is recommended to add similar clauses to identify between toys pacifier and infant pacifier so either: <ul style="list-style-type: none"> 1) nipple length no longer than 16 mm 2) comply with EN 1400 - For Nitrosamine, all under 36 months toys shall not contain Nitrosamine according to the New Toys Directive in EU. It is suggested to add this requirement for US toys. 	<p>Pacifiers are not a toy but a child-care article and should not be dealt with in the European toy standards.</p> <p>Requirements for toy intended for children under 3 years will apply to toy pacifiers but there is no specific requirement.</p> <p>The Toy Safety Directive and the requirement for Nitrosamines is not applicable to child-care articles.</p>
<i>Projectile Toys</i>	<ul style="list-style-type: none"> - Suggest adding those general requirements and Projectile toys without stored energy requirement to ASTM F963. - Currently both ASTM and CEN have agreed to participate with ISO to jointly review and revise the projectile standards with a goal of producing one standard agreeable to all. Recommend this effort be more heavily supported. 	<p>Harmonisation should be based on the findings in the work carried out in ISO TC 181.</p> <p>Note:</p> <ul style="list-style-type: none"> - projectiles with suction cups are presently subject to EC Type-approval in EU - Slings/catapults are not toys in the meaning of EN 71-1

ASTM - Detail	ICTI-recommendation	Comment
<i>Discharge Mechanisms</i>	ASTM F963 provides a clear requirement for those projectiles which can discharge potentially hazardous improvised projectiles. Suggest not to use the wording recommend in EN 71-1	The background to the word “recommend” is that it is very difficult to ensure through reasonable testing that <u>no</u> improvised projectiles can be discharged and also to define if these would be potentially hazardous.
<i>Teethers and Teething Toys</i>	Various	<p>EN does not specify certain toys that are covered but only list examples. The limit is for toys intended for children who cannot sit up unaided and have a mass of less than 0,5 kg.</p> <p>F963 specifies requirements specifically for</p> <ul style="list-style-type: none"> - teethers and teething toys - infant-rattles - squeeze toys <p>In addition, F963 specifies requirements for “Certain toys with spherical ends” for children up to 18 months and in the same clause requirements are now also for are included for toys in the shape nails, screws and bolts intended for children 18 - 48 months.</p> <p>These various requirements need to be considered as a whole when alignment of the standards is discussed.</p>
<i>Battery operated toys</i>	Various	It is not sufficient to harmonise only ASTM to EN. A complete study of EN 62115 and F963 is required to achieve harmonisation.

ASTM - Detail	ICTI-recommendation	Comment
<i>Toys Intended to be Attached to a Crib or Playpen</i>	Add the elasticity requirement to ASTM F963.	This particular requirement will be deleted from EN 71-1 if prA10 is published.
<i>Crib Mobiles</i> <i>Crib gyms</i> <i>Crib and Playpen Toys</i>	Various	The applicable warnings for these toys in the EU are specified in the directive and cannot be changed by the standardisation organisations. It is questionable if products that are intended to be placed out of the reach of children are toys in the meaning of the directive.
<i>Stroller and Carriage</i>	<ul style="list-style-type: none"> - EN 71-1 does not specify the warning requirement for Stroller and Carriage Toys - Suggest to follow ASTM F963 warning for Stroller and Carriage Toys 	EN 71-1 specifies that the warning shall be used on all toys intended to be strung across to be fixed across cradles, cots, perambulators etc
<i>Art materials</i>	It is suggested to follow US requirements.	This is a complex area (see also comments on "Hazardous substances"). EN has harmonized standards such as 71-3, 71-5 and 71-7 and also the standards EN 71-9 - 11. Furthermore, the new directive will include many new chemical requirements. It is not possible to harmonise by "following US requirements"
<i>Balls</i>	No recommendation	The definition of ball needs to be considered.
<i>Pompoms</i>	No recommendation	Pompoms are presently excluded from EN-standard

ASTM - Detail	ICTI-recommendation	Comment
<i>Hemispheric-Shaped Objects</i>	Follow US Exemption	Not possible to follow US exemption since EN 71-1 has been amended due to a formal objection against the mentioned exclusion.
<i>Yo Yo Elastic Tether Toys</i>	No recommendation	Yoyo balls are considered in prA10 to EN 71-1
<i>Magnets</i>	No recommendation	The use and abuse tests are different (fatigue test in ASTM and soaking + magnetic tension in EN). The hobby and craft items are not excluded in EN (if they are toys) and the warning on experimental sets is slightly differently worded

8. LEGISLATIVE ENVIRONMENT FOR THE SAFETY OF TOYS IN EUROPE AND THE USA

8.1. *Europe*

8.1.1. **The present Toy Safety Directive 88/378/EEC**

The Directive 88/378/EEC on the safety of toys (TSD) constitutes the legal framework for toy safety in Europe. The directive is implemented in the national legislation in all Member States.

88/378/EEC is a so called "New Approach" directive which lays the down essential safety requirements (ESR) for toys. The ESRs are interpreted in technical safety standards that are elaborated by the European Committee for Standardisation (CEN) or the European Committee for Electrotechnical Standardisation (CENELEC) by mandate of the European Commission.

When a new or revised standard, transferring the requirements in the TSD, has been published by CEN/CENELEC, a request is sent to the European Commission to publish a reference to the standard in the Official Journal of the European Union (OJEU). After assessment of the standard, and if it has proven to correctly interpret the ESRs, such a reference will be published and the standard is thereby a harmonized standard. The TSD states that conformity of toys with harmonized standards shall result in a presumption of conformity to the ESRs of the directive.

Before being placed on the market, toys must have affixed to them (their packaging or documentation) the CE-marking by which the manufacturer confirms that the toys comply with the European legislation.

Toys which do not conform in whole or in part to harmonized standards - and so do not benefit from a presumption of conformity to the legislation - must be EC type-examined by a Notified Body (NB). The NB will assess if the toy complies with the ESRs and, if this is the case, issue an EC Type-examination certificate. The manufacturer can thereafter place the toy in the market if the CE-marking has been affixed to the toy (its packaging or documentation).

The TSD also describes the obligations of the Member States regarding market surveillance activities on a national level and consultation between Member States on a European level. The directive also regulates how Member States should act if they find a non-complying product, which is likely to jeopardize the safety and/or health of consumers and/or third party. The directive also includes a possibility for member states to launch a formal objection against a standard which in their opinion does not correctly interpret the ESRs of the directive. Such a procedure

can lead to the “de-harmonisation” of a standard and a mandate to CEN to amend the standard in question.

8.1.2. The new Toy Safety Directive

On June 30, 2009 the new Toy Safety Directive was published. It came into force on July 20 (20 days after the date of publication).

Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with the Directive by 20 January 2011. They shall apply those measures with effect from 20 July 2011. Hence, although the directive has entered into force, it is not yet applicable.

During the first 2 years after the entry into force of the new directive, toys that are in conformity with the ESRs of the present TSD (88/378/EEC) shall be allowed to be placed on the market. In addition, toys that fulfil all parts of the new directive except Annex II, part III (Particular safety requirements, Chemical properties) shall be allowed to be placed on the market during a period of 4 years after the entry into force of the new directive, provided that the requirements in Annex II, part 3 of the present directive are fulfilled (Particular risks, Chemical properties).

The directive specifies ESRs for

- Physical and Mechanical properties
- Flammability
- Chemical properties
- Electrical properties
- Hygiene
- Radioactivity

The major novelties in the new TSD, compared to the present TSD, are for example

:

- Manufacturers will be required to
 - o draw up a product file showing how the manufacturer has ensured the toy complies with the relevant ESRs, and draw up an EC Declaration of conformity
 - o keep the technical documentation and the EC declaration of conformity for a period of 10 years
 - o ensure that procedures are in place for series production to remain in conformity
 - o carry out an analysis of the chemical, physical, mechanical, electrical, flammability, hygiene and radioactivity hazards that the toy may present and an assessment of the potential exposure to them

All economic operators shall be able to identify any economic operator who has supplied them with a toy and to whom they have supplied a toy for, and be able to present this information for a period of 10 years

Toys must not contain substances that are classified as carcinogenic, mutagenic or toxic for reproduction (CMR) unless these substances are either inaccessible to children in any form or comply with requirements for food contact materials. Nickel is exempted when used in stainless steel.

Migration limits for nitrosamines and nitrosatable substances are laid down for toys intended for children under 36 months and for toys intended to be placed in the mouth.

Toys must not contain anything but traces any of 55 allergenic fragrances listed in the directive and for a further 11 allergenic fragrances the toy shall be marked with the name of the fragrance. Special provisions (exemptions) apply to olfactory board games, cosmetic kits and gustative games.

Migration limits apply to a total of 19 heavy metals/elements in toys (in the present directive 8 elements are covered and with, in general, more generous limit values) unless they, due to their accessibility, function, volume or mass, clearly exclude any hazard due to sucking, licking, swallowing or prolonged contact with skin. For lead, cadmium, mercury and chrome VI only trace-levels are allowed. The migration limits are specified for three different types of material:

- dry, brittle, powder-like or pliable toy material
- liquid or sticky toy material
- scraped off toy material

Toys designed to emit sound are specifically mentioned in the particular safety requirements and so are activity toys.

The requirements for warnings have been extended and it is specifically stated that the warnings shall be clearly visible to the consumer before the purchase also when the purchase is made on-line.

Rules for toys in food have been introduced that specify that toys in food must have their own packaging which must be of such dimensions as to prevent it being swallowed and/or inhaled.

8.1.3. Other legislation, standards and reports

Toys must also comply with other European legislation that applies to toys although it may not be toy-specific. Examples of such legislation are:

- Directive 2001/95/EC General Product Safety Directive
- Directive 2002/72/EEC Food contact material
- Directive 2002/95/EEC ROHS
- Directive 2002/96/EC WEEE
- Directive 2004/108/EC EMC
- Directive 2006/12/EC Waste disposal
- Directive 2006/66/EC Batteries
- Directive 2006/95/EC Low voltage
- Directive 76/768/EEC Cosmetics
- Directive 94/62/EC on packaging and packaging waste
- Regulation 1272/2008 GHS
- Regulation 1907/2006 REACH (now including Directive 76/769/EEC and its amendments and its adaptations contains, in particular, requirements for benzene, nickel, phthalates, azocolorants, cadmium etc.)
- Regulation 1935/2004 on materials and articles intended to come into contact with food
- Directive 87/357/EEC (food imitating products – products which, appearing to be other than they are, endanger the health or safety of consumers)
- Directive 98/8/EC on the market placement of biocidal products

In addition, market requirements may exist in some countries such as e.g. ZEK 01-08 specifying that a GS-mark (a voluntary mark “Geprüfte Sicherheit”) requires testing for presence of PAH in certain products).

Standards, other than toy specific standards, and guides that may be applicable to toys are:

- EN 14372 Child use and care articles - Cutlery and feeding utensils - Safety requirements and tests (phthalates test method)
- EN 14682 Safety of children's clothing - Cords and drawstrings on children's clothing – Specifications
- EN 14362-1 Textiles - Methods for the determination of certain aromatic amines derived from azo colorants - Part 1: Detection of the use of certain azo colorants accessible without extraction
- EN 14362-2 Textiles - Methods for determination of certain aromatic amines derived from azo colorants - Part 2: Detection of the use of certain azo colorants accessible by extracting the fibres
- CR 14379 Classification of toys – Guidelines

- CEN TR 15371 Safety of toys - Replies to requests for interpretation of EN 71-1, EN 71-2, and EN 71-8
- CEN TR 15071 Safety of toys - National translations of warnings and instructions for use in EN 71
- CEN TR 13378 Child use and care articles - Safety guidelines
- CEN/CENELEC Guide 6 Guidelines for standards developers to address the needs of older persons and persons with disabilities
- ISO IEC guide 14 Purchase information on goods and services intended for consumers
- CEN Guide 11 Product information relevant to consumers Guidelines for standard developers
- CEN Guide 12 Child Safety Guidance for its Inclusion in Standards
- IEC 62079 Preparation of instructions – structuring, content and presentation

8.2. USA

The legislation that is applicable to toys in the USA is found in several acts, primarily:

- Consumer Product Safety Act Regulation
- Federal Hazardous Substances Act
- Flammable Fabrics Act Regulation
- Food, Drug and Cosmetic Act

The three first acts are administered by CPSC who publishes the regulations in the Federal Register. The Code of Federal Regulations (CFR) is a codification of these regulations and in title 16 of the CFR, the regulations with detailed requirements and test methods are given.

There is also a voluntary (see however also 8.2.1.4) Standard Consumer Safety Specification on Toy Safety (ASTM F963) elaborated by ASTM International. This standard includes both regulatory and voluntary requirements.

On August 14th, 2008, the Consumer Product Safety Improvement Act of 2008 (CPSIA) was enacted. This act sets deadlines for the Consumer Product Safety Commission (CPSC) regarding the implementation of the act.

8.2.1. CPSIA

The act covers both “Children’s product safety” and the “Consumer Product Safety Commission reform”. The part of the act that covers Children’s product safety covers for example the following items related to toys:

- Lead paint rule.
- Mandatory third party testing

- Tracking labels for children's products
- Labelling requirement for advertising
- Mandatory toy safety standards
- Prohibition on sale of products containing specified phthalates

The act addresses all products intended for children under 12.

8.2.1.1. Lead paint rule

The total level of lead in what is normally called "substrates" (plastic, wood, metal) will be limited as follows:

600 ppm from February 10, 2009

300 ppm from August 14, 2009

100 ppm Aug 14, 2011 (if this is determined to be technologically feasible)

Exclusions will apply to "inaccessible" component parts of toys (before and after use and abuse tests), provided that they are not made inaccessible by application of a surface coating, and also to certain electronic devices for which it is not deemed technologically feasible to comply with the requirements.

The permitted level of total lead in coatings was lowered to 90 ppm on August 14, 2009 (previously 600 ppm).

8.2.1.2. Mandatory third party testing

Toys that are produced after Nov 12, 2008 (90 days after the enactment) and are "subject to a consumer product safety rule under this Act (CPSIA) or similar rule, ban, standard, or regulation under any other Act enforced by the Commission", must be accompanied by a "certificate of compliance" which

- is based on a test of each product or upon a reasonable testing program
- certifies that the toy complies all rules, bans, standards, or regulations applicable to the product under the CPSIA Act or any other Act enforced by the Commission
- specifies each such rule, ban, standard, or regulation applicable to the product

The certificate shall also include, at a minimum, the date and place of manufacture, the date and place where the product was tested, each party's name, full mailing address, telephone number, and contact information for the individual responsible for maintaining records of test results.

The certificate shall accompany the applicable product or shipment of products covered by the same certificate and a copy of the certificate shall be furnished to

each distributor or retailer of the product. Electronic certificates are accepted under certain conditions.

The CPSIA presents a time line for when the above mentioned certificate for certain products shall be based on third party testing by a laboratory approved by CPSC. The time line is connected to the dates by which CPSC is obliged to publish notice of the requirements for accreditation of third party conformity assessment bodies to assess conformity with a children's product safety rule to which such children's product is subject.

It should be noted that the certificate of the manufacturer is to certify that all products comply with all rules while the third party testing shows only that samples have been third-party tested.

It should also be noted that there is no requirement for the "age" of the certificate. The certificate shall be based on a reasonable testing programme and there is no requirement for e.g. a yearly renewal of the certificate. The CPSIA will, however, (not later than November 2009) e.g.:

- initiate a program by which a manufacturer may label a consumer product as complying with the certification requirements
- establish protocols and standards ensuring that a children's product submitted to testing periodically and when there has been a material change in the product's design or manufacturing process, including the sourcing of component parts testing of random samples to ensure continued compliance

8.2.1.3. Tracking labels for children's products

As from August 14, 2009, manufacturers shall place permanent, distinguishing marks on the product and its packaging, to the extent practicable, that will enable manufacturers and end users to ascertain the location and date of production of the product, and a batch number or other identifying characteristic.

8.2.1.4. Mandatory toy safety standards

By February 10, 2009, the ASTM International Standard F963–07 "Consumer Safety Specifications for Toy Safety", will be adopted as a mandatory regulation (with an exclusion of section 4.2 and Annex 4 which regard flammability).

Before August 14, 2009, the CPSC shall assess the effectiveness of safety requirements, safety labelling requirements, and test methods in ASTM F963 where it relates to

- magnets in toys
- toxic substances in toys
- toys with spherical ends

- hemispheric-shaped objects
- cords, straps, and elastics
- battery-operated toys.

One year after the completion of the above assessment, the CPSC shall, if they deem it necessary, promulgate rules that are more stringent than those in F963. Thereafter, also the flammability requirements will be assessed.

ASTM will be required to notify CPSC of any proposed revisions of F963. Unless CPSC notifies ASTM within 90 days of receiving such notice, that it has determined that the proposed revision does not improve the safety of the consumer product covered by the standard, CPSC will adopt the revised standard as mandatory regulation within 180 days of receiving the notice of the proposed revision.

8.2.1.5. Prohibition on sale of products containing specified phthalates

As from February 10, 2009, it is prohibited to sell toys that contains concentrations of more than 0,1 percent of di-(2-ethylhexyl) phthalate (DEHP), dibutyl phthalate (DBP), or benzyl butyl phthalate (BBP).

Furthermore, the sales of toys that can be placed in a child's mouth will be prohibited from the same date if they contain concentrations of more than 0.1 percent of diisononyl phthalate (DINP), diisodecyl phthalate (DIDP), or di-n-octyl phthalate (DnOP).

The CPSC is obliged to appoint a Chronic Hazard Advisory Panel which within approximately 2 years after its appointment shall report to the CPSC on an examination of the full range of phthalates that are used in e.g. toys. The report shall include recommendations for levels at which there are a reasonable certainty of no harm to children. The report shall be based on the examination of e.g.:

- potential health effects of phthalates (after ingestion but also as a result of dermal, hand-to-mouth, or other exposure)
- likely levels of exposure to phthalates (based on normal and foreseeable use and abuse)
- cumulative effect of total exposure to phthalates, both from toys and from other sources
- recent, best-available, peer-reviewed, scientific studies of these phthalates and phthalate alternatives
- possible health effects of phthalate alternatives used in children's toys

EXAMPLE OF HARMONISED REQUIREMENTS – ASPHYXIATION HAZARDS***Combination of requirements from ISO 8124-1:2009, ASTM F963-08 and EN 71-1:2005+A9:2009 and 2009/48/EC***

The requirements and test methods specified below is an attempt to make a schematic compilation of the strictest requirements that are presently included either in any of the three standards mentioned, or foreseen as an effect of the implementation of the requirements in the new Toy Safety Directive. It does not necessarily reflect the views of the author as regards what a suitable combination of requirements should be in a possible, future, global standard. It is only intended to present a combination of the requirements which through an objective assessment are clearly the most stringent that presently exist or can be foreseen by the new directive.

It is not self-evident that the combination of the strictest requirements will also provide the highest level of protection to children. This is presuming that “strict” refers to design-restrictions for manufacturers. An example relating to hemispheric-shaped toys can be used to illustrate this. According to ASTM F 963 the asphyxiation risk from hemispheric-shaped toys with certain dimensions can be eliminated by having an opening (a “breathing hole”) with a minor dimension of 17 mm in the base of the object. The same possibility has not yet been introduced in the EN 71-1 standard and it is therefore stricter than ASTM F 963 in the sense that manufacturers cannot choose to have such a design if the toy is to be sold in Europe. Since EN 71-1 is stricter, the compilation of requirements is based on EN 71-1. However, it is quite clear that the level of protection to children would not be lower, had the possibility from ASTM F 963 been included in the compilation.

It is important to note that the requirements of the new Toy Safety Directive remain to be transferred to the European Standards by the European Standardisation Organisation CEN and that the below compilation is not intended as a proposal to CEN.

The scope has been limited to choking and asphyxiation caused by internal and external blockage of the airways. Strangulation has not been considered. The compilation cannot, in its present state, be used as a proposal for a complete section of a standard.

Small parts

These requirements apply to toys intended for children under 3 years.

If the toy is intended for children between 3 and 8 years and does not fulfil the requirements below, the toy or its packaging shall carry a warning stating that the toy is not suitable for children under 3.

Exemptions:

Paper, fabric, elastics, yarn, strings and fuzz crayons, chalks, pencils and similar writing and drawing implements without removable components, balloons, modelling clay and similar products, phonograph records and compact discs (CDs); fingerpaints, watercolors, and other paint sets.

However, tightly packed stuffed components made of fabric and/or yarn, are not excluded from the requirements.

Requirements:

No toy (including removable, liberated components, or fragments of toys) intended for children under 3 years shall, after being subjected to tests 1, 2, 5, 7, 8 but, for glued wooden toys, first test 9 in table 1 (torque-, tension-, drop-, impact-, compression- and, when applicable, soaking-test) fit entirely within the small parts cylinder of the specified dimensions as shown in figure 1.

When assessing if the toy/component/fragment fits in the cylinder, it shall not be compressed but it may be tested in any orientation.

Fragments of toys include, but are not limited to, pieces of flash, slivers of plastics, pieces of foam, or fine bits or shavings.

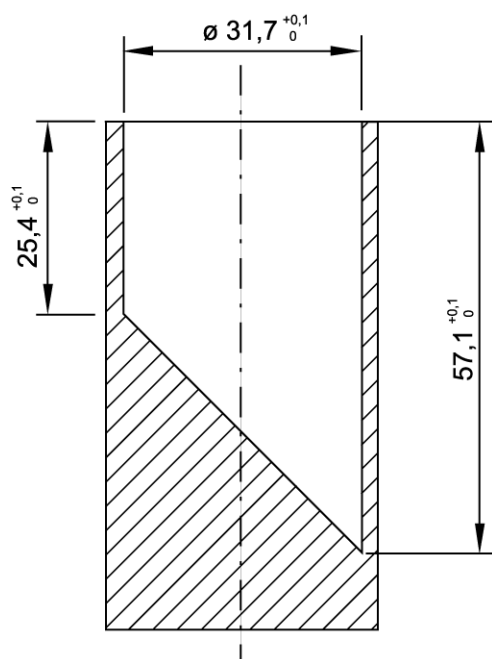


Figure 1

Filling materials

These requirements apply to toys intended for children under 3 years.

If the toy is intended for children between 3 and 8 years and does not fulfil the requirements below, the toy or its packaging shall carry a warning stating that the toy is not suitable for children under 3.

Exemption:

Filling materials from which pieces can be bitten or torn off, exclude paper, fabric, elastics, yarn, strings and fuzz. Plastic foam is however not excluded.

Requirements:

Filling materials shall conform to the following requirements:

- a) Soft filling materials shall not contain any hard or sharp contaminants such as metal particles, nails, needles and splinters
- b) Soft-filled toys shall, after being subjected to test 3 in table 1 (seam test), not make accessible any parts (e.g. rattling components, bells, shredded foam) that fit entirely within the small parts cylinder of the specified dimensions as shown in figure 1.
- c) Soft-filled toys shall, after being subjected to test 3 in table 1 (seam test), not make accessible (test with accessibility probe) any materials from which pieces can be bitten or torn thereby producing parts that fit entirely within the small parts cylinder of the specified dimensions as shown in figure 1.

When assessing if parts fit in the cylinder, they shall not be compressed but they may be tested in any orientation.

Dimensional requirements for projectiles

These requirements apply regardless of the intended age group of the toy.

Requirements

Projectiles with a suction cup as impact surface shall fulfil the following requirements:

- a) The suction cup shall not become detached when tested according to tests 1 and 2 in table 1 (torque- and tension test), unless the suction cup does not pass entirely through the template shown in figure 3. When assessing if the suction cup passes through the template it shall not be compressed but it may be tested in any orientation.
- b) The projectiles shall have a length of 57 mm or more when measured as indicated in figure 2, and with its suction cup on a flat surface under a force that is produced by its own mass

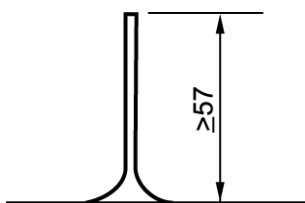


Figure 2

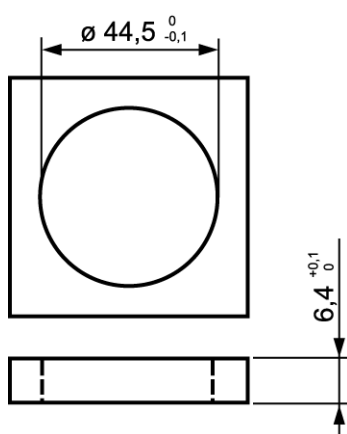


Figure 3

Projectiles with stored energy shall fulfil the following requirement:

No parts that fit entirely within the small parts cylinder of the specified dimensions as shown in figure 1 shall be released from the projectile during the test 4 in table 1 (protective component test). The requirement does not apply if the projectile is unable to be fired as a projectile by the intended mechanism after being subjected to the relevant tests.

When assessing if parts fit in the cylinder, they shall not be compressed but they may be tested in any orientation.

Dimensional requirements for certain toys

These requirements apply to toys intended for children under 18 months.

If the toy is intended for children between 18 and 36 months and does not fulfil the requirements below, the toy or its packaging shall carry a warning stating that the toy is not suitable for children under 18 months.

Exemptions:

The requirements do not apply to soft-filled toys, soft-filled parts of toys or parts of fabric nor do they apply to rigid elements having a major dimension equal to 30 mm or less.

They do not apply to toys with a mass of more than 0,5 kg unless otherwise specified.

Requirements:

- a) No part of the toys listed below shall protrude past the base of template shown in figure 4
- b) No part of the toys listed below shall, if they have nearly spherical, hemispherical or circular flared ends, protrude past the base of template shown in figure 5
- rattle-shaped toys and squeeze toys with or without noise making features;
 - teething toys or components intended to be chewed on;
 - hand-held activity toys;
 - books and building blocks covered by textile or vinyl;
 - removable components of toys intended to be strung across a crib, playpen or perambulator;
 - removable components of baby gyms (regardless of their mass);
 - similar toys

When testing if any part of the toy protrude past the base of any of the templates, the toy shall be orientated in a position which would most likely permit the entry of the toy through the slot in the template. The toy shall be placed in the slot so that the force on the toy is only the force due to its mass.

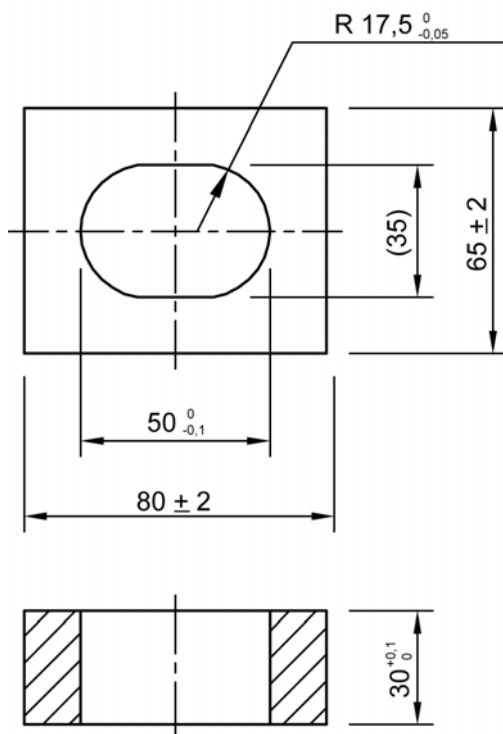


Figure 4

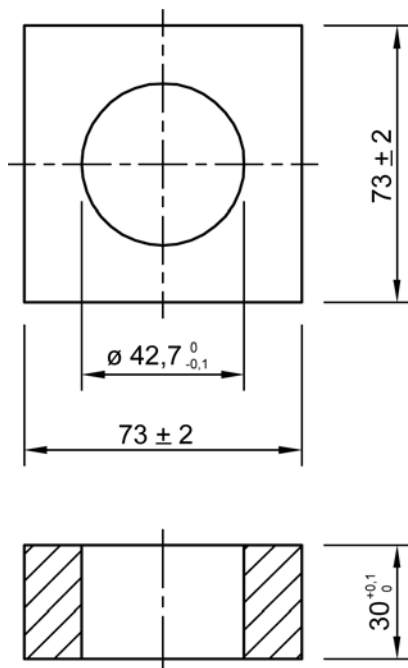


Figure 5

Additional dimensional requirements for certain toys

These requirements apply to toys intended for children between 18 months and 48 months.

If the toy is intended for children between 48 months and 96 months and does not fulfil the requirements below, the toy or its packaging shall carry a warning stating that the toy is not suitable for children under 48 months.

Exemptions:

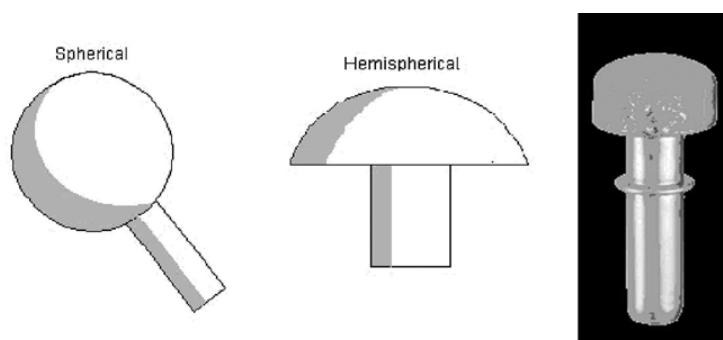
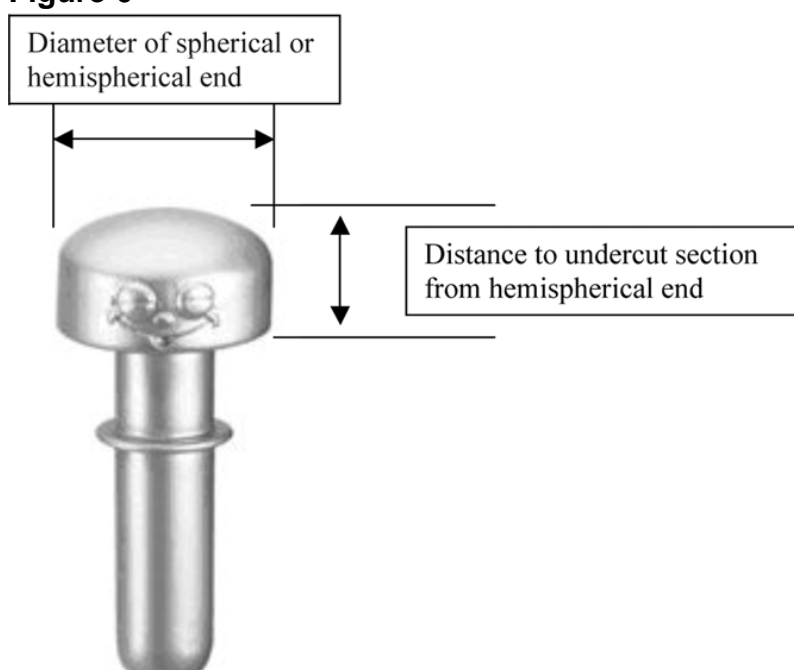
The requirements do not apply to the following nail, screw, and bolt shapes:

- Soft-filled shapes and fabric shapes
- Shapes with an overall length less than 57.1 mm
- Shapes whose spherical or hemispherical ends are less than 15 mm in diameter, as shown in figure 7
- Shapes with flexible ends
- Shapes where the distance to the undercut is greater than 44.4 mm as shown in figure 7

Requirements:

Toys in the shape of nails, screws, and bolts that incorporate spherical or hemispherical ends attached to a shaft or handle (see figure 6) shall be so designed that no part of the toy protrudes past the base of the template shown in figure 4.

When testing if any part of the toy protrude past the base of the template, the toy shall be orientated in a position which would most likely permit the entry of the toy through the slot in the template. The toy shall be placed in the slot so that the force on the toy is only the force due to its mass.

**Figure 6****Figure 7**

Dimensional requirements for play figures

These requirements apply to toys intended for children under 3 years.

If the toy is intended for children between 3 and 8 years and does not fulfil the requirements below, the toy or its packaging shall carry a warning stating that the toy is not suitable for children under 3.

Exemptions:

This requirement does not apply to soft-filled toys.

Requirements:

Play figures (including those with added or moulded features such as hats or hair which retain the rounded shape of the end) having

- a) a round, spherical or hemispherical end with tapered neck attached to a cylindrical shape without appendages; and
- b) an overall length not exceeding 64 mm (see examples in figure 8),

shall be designed so that no part of the rounded end protrudes past the base of template shown in figure 5.

When testing if any part of the toy protrudes past the base of the template, the template shall be clamped so that the axis of the slot is substantially vertical and the slot is unobstructed at its top and bottom openings. The play-figure shall then be orientated in a position which would most likely permit the entry of the rounded end through the slot in the template. The toy shall be placed in the slot so that the force on the toy is only the force due to its mass.

Balls and similar-shaped objects

These requirements apply to toys or components of toys that are balls and that are intended for children under 3 years.

If the toy is intended for older children and does not fulfil the requirements below, the toy or its packaging shall carry a warning stating that the toy is not suitable for children under 3.

The toy/component is considered to be a ball if it fits the following criteria:

- a spherical, ovoid, or ellipsoidal object, usually but not always, designed or intended to be thrown, hit, kicked, rolled, dropped or bounced and with a ratio between the major and the minor axes higher than 70 %, or
- a multisided object formed by at least 48 connecting planes into a generally spherical, ovoid or ellipsoidal shape

The requirements apply also if the ball is attached to a toy or article by means of string, elastic cord, or similar tether.

Exemptions:

The requirement does not apply to

- dice
- cylindrical objects and cylindrical objects with rounded ends

Requirements:

No toy shall

- be a ball
- contain a removable ball
- release a ball after being subjected to tests 1, 2, 5, 7, 8 but, for glued wooden toys, first test 9 in table 1 (torque-, tension-, drop-, impact-, compression- and, when applicable, soaking-test)

if the ball passes entirely through the template shown in figure 3.

When testing if the toy/ball passes entirely through the template, the template shall be positioned and clamped so that the axis of the slot is substantially vertical and

the slot is unobstructed at its top and bottom openings. The toy/ball shall be placed, without compressing it, in any orientation in the slot so that the force on the toy/ball is only the force due to its mass.

NOTE – See also the requirement in the clause “Toy packaging”

Suction cups

These requirements apply to toys intended for children under 3 years.

If the toy is intended for older children and does not fulfil the requirements below, the toy or its packaging shall carry a warning stating that the toy is not suitable for children under 3.

Requirements:

No toy shall

- be a suction cup
- contain a removable suction cup
- release a suction cup after being subjected to tests 1, 2, 5, 7, 8 but, for glued wooden toys, first test 9 in table 1 (torque-, tension-, drop-, impact-, compression- and, when applicable, soaking-test)

if the suction cup passes entirely through the template shown in figure 3.

Furthermore, a toy with an attached suction cup shall not, together with the suction cup, pass entirely through the template shown in figure 3.

When testing if the suction cup passes entirely through the template, the template shall be positioned and clamped so that the axis of the slot is substantially vertical and the slot is unobstructed at its top and bottom openings. The suction cup shall be placed, without compressing it, in any orientation in the slot so that the force on the suction cup is only the force due to its mass.

Hemispherical shaped toys

These requirements apply to toys intended for children under 3 years provided that the toys are cup-shaped, bowl-shaped or one half of an egg-shaped and have a nearly round, oval or elliptical opening with the minor and major inner dimensions between 64 mm and 102 mm, a volume of less than 177 ml, and a depth greater than 13 mm.

If the toy is intended for children between 3 and 8 years and does not fulfil the requirements below, the toy or its packaging shall carry a warning stating that the toy is not suitable for children under 3.

Exemptions:

- containers that must be airtight so the contents can maintain their functional integrity (e.g. modelling clay containers);

- components of larger products (e.g. bowl-shaped smoke stack that is permanently attached to a toy train or a swimming pool that is moulded into a larger toy playscape) that do not become detached after being subjected to tests 1, 2, 5, 7, 8 but, for glued wooden toys, first test 9 in table 1 (torque-, tension-, drop-, impact-, compression- and, when applicable, soaking-test)

Requirements:

Cup-shaped, bowl-shaped or one half of an egg-shaped toys shall comply with one or more of the requirements in items a), b), c), d) or e) below:

- a) The object shall have two or more openings that are 13 mm or more from the rim as measured along the outside contour;
 - if the openings are placed in the base of the object, two or more of the openings shall be 13 mm or more apart (see figure 8a);
 - if the openings are not placed in the base of the object, two or more of the openings shall be placed at least 30° but not more than 150° apart (see figure 8 b);
- b) The plane of the open end of the cup shape shall be interrupted at the centre by some type of divider that extends 6 mm or less from the plane of the opening. An example of an interruption includes a rib through the centre of the opening (see figure 8 c);
- c) The object shall have three openings located between 6 mm and 13 mm from the rim and 100° or more apart as measured along the outside contour;
- d) The object shall have a repeating scalloped edge pattern around the entire rim. The distance between centrelines of adjacent peaks shall be 25 mm or less and the depth shall be 6 mm or more (see Figure 8 d).

For the purpose of these requirements, an opening is defined as a hole of any shape with a dimension of 2 mm or more.

The requirements above apply before and after testing to subjected to tests 1, 2, 5, 7, 8 but, for glued wooden toys, first test 9 in table 1 (torque-, tension-, drop-, impact-, compression- and, when applicable, soaking-test).

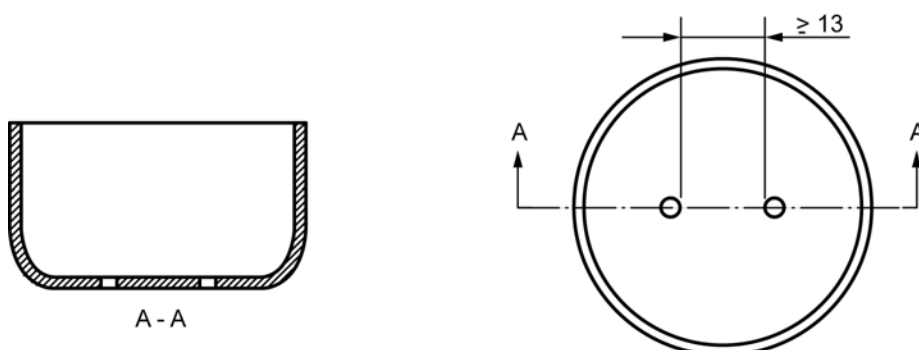


Figure 8 a

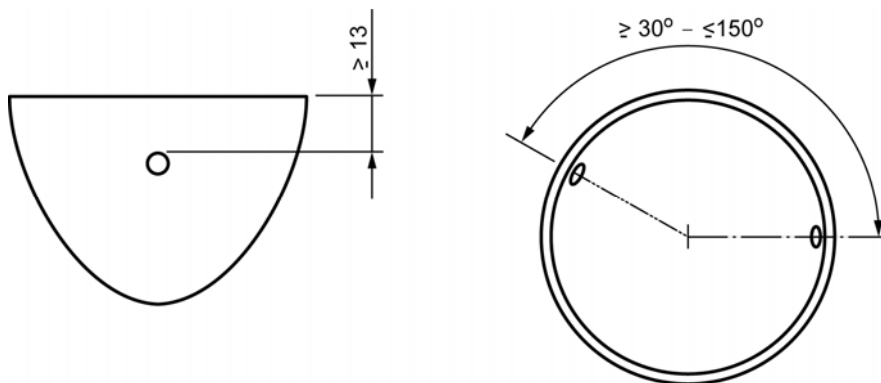


Figure 8 b

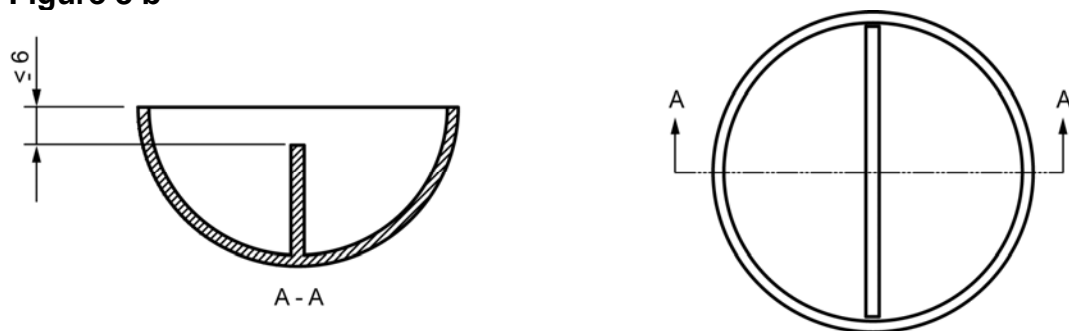


Figure 8 c

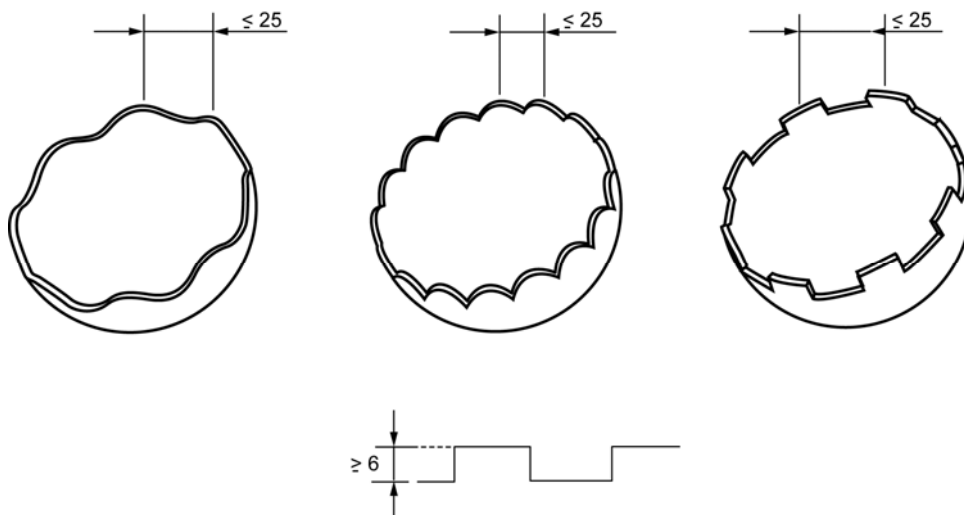


Figure 8 d

NOTE – See also the requirement in the clause “Toy packaging”

Plastic sheeting, decals and toy bags

These requirements apply to all age groups unless otherwise specified.

Exclusions:

- Shrink film in the form of an over wrap that would normally be destroyed when the package is opened by a consumer

- Bags or plastic film with a minor dimension of 100 mm or less. Bag dimensions shall be measured while in the form of a bag, not cut open into a single thickness sheet.

Requirements:

Toys with flexible plastic sheeting shall conform to one of the following requirements:

Plastic sheets without any backing shall;

- a) have an average thickness of 0,038 mm or more and the thickness in a single point shall never be less than 0,03175 mm, when measured according to a specified method; *or*
- b) be perforated with defined holes so that a minimum of 1 % of the area has been removed over any area of 30 x 30 mm

Note: For plastic balloons, the requirements in item a) apply to double layers of plastic sheeting (i.e. the thickness is measured without inflating or destroying the balloon).

If the toy is intended for children under 3 years the above requirements also apply to plastic sheeting and plastic decals which become detached when tested according to test 10 in table 1 (feeler gauge test), followed by test 2 in table 1 (tension test) and has an area greater than 100 mm x 100 mm.

Toy bags with an opening perimeter greater than 380 mm having a drawstring as a means of closure shall either:

- a) be made of material permeable to air; *or*
- b) provide a total ventilation area of 1 300 mm² or more through at least two holes at least 150 mm apart or through any equivalent single ventilation area

Toy packaging

These requirements apply regardless of the intended age group of the toy unless otherwise specified.

Requirements:

The packaging of toys shall conform to the following requirements:

- a) Bags made of flexible plastics with an opening perimeter greater than 380 mm used for external or internal packaging, shall have an average sheet thickness of 0,038 mm or more when measured according to a specified method

- b) Bags made of flexible plastics with an opening perimeter greater than 380 mm shall not have a drawstring or cord as a means of closing.
- c) The requirements in the clause “Balls and similar-shaped objects” apply to toy packaging
- d) Toy packaging that is intended to be separated into two individual halves, and which:
- before separation, has a cylindrical shape with rounded ends, and which
 - after separation has no attachment between the two halves, or has an attachment between the two halves that withstands tests 1 and 2 in table 2 (torque and tension test)
- shall not entirely pass through the template shown in figure 3, when tested according to the method specified in the clause “Balls and similar-shaped objects”
- e) The requirements in the clause “Hemispherical shaped toys” apply to containers that are part of the toy packaging, for toys intended for children under three
- f) Toys contained in food must have their own packaging. The packaging, as it is supplied, of such toys shall not fit entirely within the small parts cylinder of the specified dimensions as shown in figure 1.

Expanding toys

These requirements apply regardless of the intended age group of the toy.

Exclusions:

These requirements do not apply to seeds in growing kits.

Requirements:

Toys and components of toys made of expanding materials, which fit entirely within the small parts cylinder of the specified dimensions as shown in figure 1, before or after being subjected to tests 1, 2, 5, 7, and 8 in table 1 (torque-, tension-, drop-, impact-, and compression-test) shall not expand more than 50 % in any dimension when tested as specified below.

When assessing if the toy/component/fragment fits in the cylinder, it shall not be compressed but it may be tested in any orientation.

Test method

Condition the toy or component at (20 ± 5) °C and at a relative humidity of 40 % to 65 % for at least 7 h before the test. Measure the maximum dimensions of the toy or any component of the toy in the x, y and z dimensions using callipers. Submerge the toy or component completely in a container of demineralised water

at $(20 \pm 5) ^\circ\text{C}$ for $(2472 \pm 0,5)$ h. Ensure that sufficient water is used so that the toy or component still remains under water at the end of the test.

Remove the item using a pair of tongs. If the item cannot be removed because of insufficient mechanical strength, it is considered to pass this test.

Allow water adhering to the toy or component to drain for 1 min and re-measure the item.

After re-measuring, repeat the above procedure twice, from the point where the toy or component is submerged in the demineralised water, such that the item has been measured after 24, 48 and 72 hours of submergence.

Calculate the expansion in the x, y and z dimensions as a percentage of the original dimension and determine whether it has expanded more than 50 % in any direction after 24, 48 or 72 h.

If the toy fails the requirement after 24 or 48 hours no further testing is required.

Pompoms

These requirements apply to toys intended for children under 3 years.

If the toy is intended for children between 3 and 8 years and does not fulfil the requirements below, the toy or its packaging shall carry a warning stating that the toy is not suitable for children under 3.

The toy/component is considered to be a pompom if it fits the following definition:

Lengths or strands of fibre, yarns or threads clamped or secured and tied in the centre, and brushed up to form a substantially spherical, ovoid or ellipsoidal shape. The definition includes substantially spherical-, ovoid- or ellipsoidal-shaped soft-filled attachments (see figure 9).



Figure 9 - Regular and rounded pompoms

Exclusions:

Tassels with long strands are not considered pompoms (see figure 10).



Figure 10 – Tassel with long strands

Requirements:

Loose pompoms and pompoms that become detached from a toy after being subjected to tests 1, 2, 5, 7, and 8 in table 1 (torque-, tension-, drop-, impact-, and compression-test) shall not pass entirely through the template shown in figure 3.

When testing if the pompom passes entirely through the template, the template shall be positioned and clamped so that the axis of the slot is substantially vertical and the slot is unobstructed at its top and bottom openings. The pompom shall be placed, without compressing it, in any orientation in the slot so that the force on the pompom is only the force due to its mass.

Any components, pieces, or individual strands of the pompom that are liberated during relevant foreseeable use/abuse tests shall not be subjected to the test in which it is determined whether or not they pass entirely through the template in figure 3.

Mouth actuated toys

These requirements apply regardless of the intended age group of the toy.

Requirements:

Mouth-actuated toys shall conform to the following requirements:

- a) Mouth-actuated toys, removable mouthpieces of mouth-actuated toys, and any part that becomes detached after being subjected to tests 1, 2, 5, 7, 8 but, for glued wooden toys, first test 9 in table 1 (torque-, tension-, drop-, impact-, compression- but and, when applicable, soaking-test), shall not fit entirely within the small parts cylinder of the specified dimensions as shown in figure 1.

When assessing if the toy/component fits in the cylinder, it shall not be compressed but it may be tested in any orientation.

- b) Mouth-actuated toys which contain loose components such as spheres in a whistle or reeds in a noisemaker shall not, when tested according to test 11 in table 1 (suction/blowing test), release any objects that fit entirely within the small parts cylinder of the specified dimensions as shown in figure 1.
- c) Mouthpieces fitted to balloons shall conform to the requirements in item a)
- d) Mouth-actuated projectile toys (e.g. peashooters) shall have a mouth piece which does not allow the intended projectiles to pass through when tested 10 times (by loading the mouth-actuated projectile toy with the intended projectile and applying a pressure of 13,8 kPa \pm 5 % in the direction of the mouth piece for 5 s) and thereafter does not become detached when tested according to relevant foreseeable use/abuse tests.

Toys in food

These requirements apply regardless of the intended age group of the toy.

Exclusions

Toys not co-mingled or contained within the food such as a toy attached to a box of biscuits.

Requirements:

Toys in food shall conform to the following requirements:

- a) Toys shall not be firmly attached to a food product at the moment of consumption, in such a way that the food product needs to be consumed in order to get direct access to the toy
- b) Parts of toys directly attached to a food product in such a way that they are accessible without consuming the food product, shall not fit entirely within the small parts cylinder of the specified dimensions as shown in figure 1 or pass entirely through the template shown in figure 3. The tests shall be performed as specified in the clauses "Small parts" and "*Balls and similar-shaped objects*", respectively
- c) Toys contained in food or co-mingled with food shall carry a warning: "Warning! Toy inside. Adult supervision recommended."

NOTE – See also the requirement in the clause "Toy packaging"

Table 1. Foreseeable use/abuse tests

NOTE - Detailed test methods have not been included for all tests.
The tests are applied for age groups specified in the requirements.

1	Torque test	0 to < 36 m 36 and up	0.34 ± 0,02 Nm 0.45 ± 0,02 Nm
2	Tension test	0 and up	Accessible dimension < 6 mm: 50 ± 2 N Accessible dimension ≥ 6 mm: 90 ± 2 N
3	Seam test	0 and up	70 ± 2 N
4	Protective component test	0 and up	70 ± 2 N
5	Drop test*	0 to < 18 m 18 and up	10 drops x 1500mm ± 50 mm 5 drops x 900mm ± 50 mm
6	Tip-over test*	0 and up	120 N, in a horizontal direction and 1 500 mm above the horizontal surface or at the top edge of the toy for toys less than 1 500 mm in height
7	Impact test	0 to 96 m	1 ± 0.02 kg from height of 100 ± 2 mm
8	Compression test	0 to < 36 m 36 and up	110 ± 5 N 136 ± 5 N
9	Soaking test	0 and up	Submerge in demineralised water (20 ± 5) °C for 4 min. Keep at room temperature for 10 minutes. Perform the test cycle four times

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10	Feeler gauge test	0 and up	Gauge thickness $0,4 \pm 0,02$ mm. Insertion edge radius 3 mm. Insert the feeler gauge with a force of 25 ± 2 N between the component and the underlying layer of the toy at any angle between 0° and 10° from the toy surface. Perform the test 30 times and insert the feeler gauge at any place around the component but not at the same place more than 5 times. Determine whether the gauge is inserted more than 2 mm.
11	Suction/blowing test	0 and up	Subject the toy to 10 alternating blowing and sucking cycles, each within 5 s and of at least 295 ± 10 cm ³ . Max positive/negative pressure 13,8 kPa.
*	<i>For toys with a projected base area of more than 0,26 m² or a volume of more than 0,08 m³ calculated without regard to minor appendages, or a mass of 4,5 kg or more, the drop test is substituted by tip-over test</i>		