TECHNICAL REPORT

ISO/TR 8124-9

Second edition
2020-03

Safety of toys —

Part 9: Safety aspects related to mechanical and physical properties — Comparison of ISO 8124-1, EN 71-1 and ASTM F963

Sécurité des jouets —

Partie 9: Aspects de sécurité relatifs aux propriétés mécaniques et physiques — Comparaison entre l'ISO 8124-1, l'EN 71-1 et l'ASTM F963

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 181, *Safety of toys*.

This second edition cancels and replaces the first edition (ISO/TR 8124-9:2018), which has been technically revised. The main changes to the previous edition are detailed in Annex C.

A list of all parts in the ISO 8124 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

The purpose of this document is to compare and contrast the identified versions of ASTM F963:2017, EN 71-1:2014+A1:2018 and ISO 8124-1:2018. This document focuses on the contents of these three referenced standards as they relate to mechanical and physical properties including scope, definitions, general requirements, warnings and test methods.

For ease of use and readability, ISO 8124-1:2018, Clause 4 is listed in Clause 6 of this document. For example, ISO 8124-1:2018, 4.3 relates to 6.4 of this document.

This document is an overview and, therefore, does not cover the entirety of all the differences between ISO 8124-1, ASTM F963 and EN 71-1. In addition, this document is not to be relied on to fully understand conformity with any of the referenced standards or the requirements within them. In the case of any discrepancies in the comparisons presented, please refer to the relevant clauses of the referenced standards.

The index of requirements in EN 71-1 is given in Annex A.

The index of requirements in ASTM F963 is given in Annex B.

Safety of toys —

Part 9: Safety aspects related to mechanical and physical properties — Comparison of ISO 8124-1, EN 71-1 and ASTM F963

1 Scope

This document consists of a comparison of the mechanical and physical requirements covered by the following toy safety standards:

a) ISO: ISO 8124-1:2018;

b) Europe (CEN): EN 71-1:2014+A1:2018;

c) USA: ASTM F963:2017.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

4 Comparison of scopes

The scope of applicable toy products covered by the referenced standards is generally similar, as shown in Table 1.

Table 1 — Scope

ISO 8124-1	EN 71-1	ASTM F963
The requirements in this document apply to all toys, i.e. any product or material designed or clearly intended for use in play by children under 14 years of age	This European Standard applies to toys for children, toys being any product or material designed or intended, whether or not exclusively, for use in play by children of less than 14 years *NOTE "The words "whether or not exclusively" have been added to the definition to indicate that the product does not have to be exclusively intended for playing purposes in order for it to be considered as a toy, but it can have other functions as well. For example, a key-ring with a teddy bear attached to it is considered as a toy, or a sleeping bag in the shape of a soft filled toy"*	This specification covers requirements and contains test methods for toys intended for use by children under 14 years of age

Table 2 illustrates the differences in the product types which are exempted from the scope of each standard.

Table 2 — Exemptions

ISO 8124-1	EN 71-1	ASTM F963
Bicycles, except for those considered to be toys, i.e. those having a maximum saddle height of 435 mm	Bicycles with a maximum saddle height of more than 435 mm, measured as the vertical distance from the ground to the top of the seat surface, with the seat in a horizontal position and with the seat pillar set to the minimum insertion mark (see Note 1)	Bicycles
Slingshots	Toy slings and toy catapults, supplied without projectiles. (see Note 2) Toy slings and toy catapults supplied with projectiles are covered by this standard	Sling shots
Darts with metal points	Products and games using sharp-pointed missiles, such as sets of darts with metallic points (see Note 1)	Sharp-pointed darts
Home and public playground equipment	Playground equipment intended for public use (see Note 2)	Playground equipment
Compressed air- and gas-operated guns and pistols	Guns and pistols using compressed gas, with the exception of water guns and water pistols (see Note 1)	Non-powder guns
NOTE 1 For the purpose of EN 71-1, these product types are not considered as toys. There are guidance documents issued by CEN to assist in the classification of toys. NOTE 2 EN 71-1 does not apply to these toys.		

Table 2 *(continued)*

ISO 8124-1	EN 71-1	ASTM F963
Kites (except for the electric resistance of their strings, which is included)	—	Kites (except for electric resistance of kite strings and handheld lines over 6 ft (1,8 m) long, attached to flying devices intended for use as playthings)
Model kits, hobby and craft items, in which the finished item is not primarily of play value	—	Hobby and craft items in which the finished item is not primarily of play value Model kits in which the finished item is not primarily of play value
Sporting goods and equipment, camping goods, athletic equipment, musical instruments and furniture; however, toys which are their counterparts are included	—	Sporting goods, camping goods, athletic equipment, musical instruments, juvenile products, and furniture However, toys that are their counterparts are covered
Models of aircraft, rockets, boats and land vehicles powered by combustion engines; however, toys which are their counterparts are included	Toy vehicles equipped with combustion engines (see Note 2)	Powered models of aircraft, rockets, boats, and land vehicles; however, toys that are their counterparts are covered
Collectible products not intended for children under 14 years of age	Products for collectors, provided that the product or its packaging bears a visible and legible indication that it is intended for collectors of 14 years of age and above Examples of this category are: — detailed and faithful scale models — kits for the assembly of detailed — scale models — folk dolls and decorative dolls and other similar articles — historical replicas of toys	—
Holiday decorations that are primarily intended for ornamental purposes	Decorative objects for festivities and celebrations (see Note 1)	—
Aquatic equipment intended to be used in deep water, swimming-learning devices and flotation aids for children such as swim-seats and swim-aids	Aquatic equipment intended to be used in deep water, and swimming learning devices for children, such as swim seats and swimming aids (see Note 1)	—
NOTE 1 For the purpose of EN 71-1, these product types are not considered as toys. There are guidance documents issued by CEN to assist in the classification of toys. NOTE 2 EN 71-1 does not apply to these toys.		

Table 2 *(continued)*

ISO 8124-1	EN 71-1	ASTM F963
Toys installed in public places (e.g. arcades and shopping centres)	Automatic playing machines, whether coin operated or not, intended for public use (see Note 2)	—
Puzzles having more than 500 pieces or without a picture, for specialists	Puzzles with more than 500 pieces (see Note 1)	—
Fireworks including percussion caps, except percussion caps specifically designed for toys	Fireworks, including percussion caps which are not specifically designed for toys (see Note 1)	—
Products containing heating elements intended for use under the supervision of an adult in a teaching context	Products intended for use for educational purposes in schools and other pedagogical contexts under the surveillance of an adult instructor, such as science equipment (see Note 1)	—
Steam engines	Toy steam engines (see Note 2)	—
Video toys that can be connected to a video screen and operated at a nominal voltage greater than 24 V	—	—
Babies' pacifiers (dummies)	Babies' soothers (see Note 1)	—
Faithful reproduction of firearms	Reproductions of real fire arms (see Note 1)	—
Electric ovens, irons or other functional products operated at a nominal voltage greater than 24 V	Functional educational products, such as electric ovens, irons or other functional products, as defined in 2009/48/EC, operated at a nominal voltage exceeding 24 V which are sold exclusively for teaching purposes under adult supervision (see Note 1)	—
Bows for archery with an overall relaxed length exceeding 120 cm	Bows for archery over 120 cm long (see Note 1)	—
Fashion jewellery for children	Fashion accessories for children which are not for use in play (see Note 1)	—
	Scooters and other means of transport designed for sport or which are intended to be used for travel on public roads or public pathways	Non-powered scooters (see Consumer Safety Specification F2264) Recreational powered scooters and pocket bikes (see Consumer Safety Specification F2641)
—	Electrically driven vehicles which are intended to be used for travel on public roads, public pathways, or the pavement thereof (see Note 1)	—

NOTE 1 For the purpose of EN 71-1, these product types are not considered as toys. There are guidance documents issued by CEN to assist in the classification of toys.

NOTE 2 EN 71-1 does not apply to these toys.

Table 2 *(continued)*

ISO 8124-1	EN 71-1	ASTM F963
—	Electronic equipment, such as personal computers and game consoles, used to access interactive software and their associated peripherals, unless the electronic equipment or the associated peripherals are specifically designed for and targeted at children and have a play value on their own, such as specially designed personal computers, key boards, joy sticks or steering wheels (see Note 1)	—
—	Interactive software, intended for leisure and entertainment, such as computer games, and their storage media, such as CDs (see Note 1)	—
—	Child-appealing luminaires (see Note 1)	—
—	Electrical transformers for toys (see Note1)	—
—	—	Tricycles
	—	Crayons, paints, chalks, and other similar art materials in which the material itself or the finished item is not primarily of play value, except that all art materials, whether or not a component of a toy, must comply with LHAMA, in accordance with 4.29.1 to 4.29.3.
—	—	Constant air inflatables
NOTE 1 For the purpose of EN 71-1, these product types are not considered as toys. There are guidance documents issued by CEN to assist in the classification of toys. NOTE 2 EN 71-1 does not apply to these toys.		

5 Comparison of terms and definitions

5.1 General

Table 3 illustrates the terms that are defined in the referenced standards.

Table 3 — Defined terms

ISO 8124-1	EN 71-1	ASTM F963
3.1 accessible	3.1 accessible	3.1.2 accessible
3.2 aquatic toy	3.3 aquatic toy	3.1.4 aquatic toy
3.3 arrow	3.2 arrow	3.1.5 arrow
3.4 backing	3.5 backing	—
3.5 ball	3.6 ball	3.1.7 ball
3.6 battery-operated toy	—	3.1.11 battery-operated toy

Table 3 *(continued)*

ISO 8124-1	EN 71-1	ASTM F963
3.7 burr	3.7 burr	3.1.12 burr
3.8 close-to-the-ear toy	3.11 close-to-the-ear toy	3.1.14 close-to-the-ear toy
3.9 collapse	3.12 collapse	3.1.16 collapse
3.10 cord	3.13 cord	3.1.19 cord
3.11 crushing	3.16 crushing	3.1.21 crushing
3.12 C-weighted peak sound pressure level ($L_{p\mathrm{Cpeak}}$)	3.50 peak emission sound pressure level	3.1.13 C-weighted peak sound pressure level (L_{Cpeak})
3.13 dart	3.17 dart	—
3.14 discharge mechanism	3.18 discharge mechanism	3.1.24 discharge mechanism
3.15 driving mechanism	3.19 driving mechanism	—
3.16 edge 3.16.1 curled edge 3.16.2 hemmed edge 3.16.3 rolled edge	3.20 edge	3.1.22 curled edge 3.1.41 hemmed edge 3.1.75 rolled edge
3.17 A-weighted equivalent sound pressure level ($L_{p\mathrm{Aeq}}$)	3.72 time-averaged emission sound pressure level	3.1.1 A-weighted equivalent sound pressure level (L_{Aeq})
3.18 expanding material	3.24 expanding material	3.1.27 expanding material
3.19 explosive action	—	3.1.28 explosive action
3.20 fastener	3.25 fastening	3.1.30 fastener
3.21 feathering	—	3.1.31 feathering
3.22 flash	—	3.1.32 flash
3.23 folding mechanism	—	3.1.33 folding mechanism
3.24 free flight	3.30 free flight	3.1.34 free flight
3.25 functional magnet in electrical or electronic components of toys	3.33 functional magnet in electrical or electronic components of toys	—
3.26 functional toy	3.34 functional product 3.35 functional toy	—
3.27 fuzz	3.36 fuzz	3.1.35 fuzz
3.28 glass	—	—
3.29 hand-held toy	3.37 hand-held toy	3.1.36 hand-held toy
3.30 harm	—	—
3.31 hazard	—	3.1.37 hazard
3.32 hazardous projection	—	3.1.65 projection, hazardous
3.33 hazardous sharp edge	—	3.1.25 edge, hazardous
3.34 hazardous sharp point	—	3.1.57 point, hazardous
3.35 hinge-line clearance	3.38 hinge line	3.1.42 hinge-line clearance
3.36 lap joint	3.46 overlap joint	3.1.44 lap joint
3.37 large and bulky toy	3.39 large and bulky toy	3.1.45 large and bulky toy
3.38 leading edge	3.40 leading part	3.1.47 leading edge
3.39 marble	marble is covered by the definition of “balls” in EN 71-1	3.1.49 marble
3.40 magnetic component	3.41 magnetic component	3.1.38 hazardous magnet 3.1.39 hazardous magnetic component
3.41 magnetic/electrical experimental set	3.42 magnetic/electrical experimental set	3.1.48 magnetic/electrical experimental set