PD ISO/TR 8124-8:2014

BSI Standards Publication

Safety of toys

Part 8: Age determination guidelines

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National foreword

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TECHNICAL REPORT

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Safety of toys —

Part 8: Age determination guidelines

Sécurité des jouets —

Partie 8: Lignes directrices pour la détermination de l'âge

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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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The committee responsible for this document is ISO/TC 181, *Safety of toys*.

ISO 8124 consists of the following parts, under the general title *Safety of toys*:

— *Part 1: Safety aspects related to mechanical and physical properties*

— *Part 2: Flammability*

— *Part 3: Migration of certain elements*

— *Part 4: Swings, slides and similar activity toys for indoor and outdoor family domestic use*

— *Part 5: Determination of total concentration of certain elements in toys*

— *Part 6: Certain phthalate esters in toys and children's products*

— *Part 7: Requirements and test methods for finger paints*

— *Part 8: Age determination guidelines* [Technical Report]

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Safety of toys —

Part 8: Age determination guidelines

1 Scope

This Technical Report provides guidelines for the determination of the lowest age at which children start playing with toys in specific toy sub-categories and is primarily directed to manufacturers and agencies that evaluate the compliance of toys with safety standards.

This Technical Report can also be used as a reference to determine the appropriateness of toys by earliest age, for use by distributors, institutions, and organizations involved with child play, as well as by paediatric institutions, teachers, other professionals that use toys in their routine activities, and consumers.

The age at which children develop different abilities is unique for each individual child. These guidelines illustrate the age ranges during which a typical child has developed certain abilities.

Although age grading has safety implications, these guidelines are not intended to address specific safety requirements. Specific safety requirements for toys can be found in the toy safety standards in this International Standard (and in other regional toy safety standards and regulations). As an example, such standards will restrict the presence of small parts and small balls in toys intended for certain age groups, due to the choking hazard.

Information on how electronic toys and electronics in toys were considered in the development of these ages determination guidelines is given in Annex B.

2 Terms and definitions

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

2.1
age groups and aspects related to the motor and cognitive development and behaviour of children
age groups used in the analyses, as well as the aspects related to children's development

Note 1 to entry: Extracted from Reference [4].

2.2
toy categories and sub-categories
sub-categories correspond to general types or groups of toys that children use that comprise the play category

Note 1 to entry: The following are the categories according to the purposes and functions:

— sensorimotor activities - first age;

— toys for physical activities;

— toys for intellectual activities;

— toys that reproduce the technical world;

— toys for the development of feelings and empathy;

— toys for creative activities;

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— toys for social relationship.

Note 2 to entry: The toy sub-categories described herein were based on: the adaptation by Raquel Zumbano Altman for Brazil, on the original international classification provided by I.C.C.P. (International Council of Children Play) by André Michelet and the Centre National d'Information du Jouet (France), 1981, which classify toys according to their purposes, features, and functions. This same classification was undertaken at LABRIMP – Laboratório de brinquedos e materiais pedagógicos of FEUSP Faculdade de Educação da Universidade de São Paulo, in 1997 by Prof. Dr. Tizuko Morchida Kishimoto, Raquel Z. Altman, and Roseli Aparecida Monaco.[1]

Note 3 to entry: In addition to the original classification, new sub-categories have been included. The review and inclusion of new sub-categories take into account the continued evolution of the toy market and was prepared by Angela Madeira (Brazil). See Annex A.

2.3
gross motor skills
activities of the large muscles of the body, related to functions of sustaining head positions, sitting, walking, and running

2.4
fine motor skills
clenching motion activities of the hands, such as gripping, clasping, and pincer movements as well as fine movements used for drawing and writing

2.5
starting age
first age at which it is appropriate for a child to play with a specific type of toy

Note 1 to entry: At very young ages, "play" can be considered the interaction between a caregiver and a child, where the caregiver is using the toy to entertain or get the attention of the child such as with a rattle. It is only after further development that the child can actually play with the toy.

Note 2 to entry: For the purposes of this guidance document, a range of starting ages is presented for various sub-categories of toys. The age range covers the first day of the lowest age and through the day prior to the highest age in the range. For example, a starting age range of 4 months to under 8 months would be from the day that the child becomes 4 months old until the end of the day prior to the child becoming 8 months old.

Note 3 to entry: When a starting age is mentioned for specific categories of toys, it doesn't mean that all the toys belonging to that category must be classified as suitable for that age. Number of pieces, dimensions, level of detail and realism, special functions of the specific toy may change/increase the intended age.

3 Guidelines

3.1 Children with starting ages birth to under 4 months

3.1.1 Aspects related to the motor and cognitive development, and behaviour of children with starting ages birth to under 4 months

Usually, the following development and behaviour can be observed in children with starting ages birth to under 4 months.

— Do not yet have the motor abilities required to play with toys; they are only used as objects for exploration and entertainment rather than for play.

— Do not yet have the ability to interact with books due to the lack of physical, cognitive, and visual abilities required for this activity.

— Are attracted by multi-sensory elements and are able to recognize the parents; have sucking and breastfeeding reflex, but are unable to sit up by themselves; have abrupt, uncontrolled, and limited motions. They touch, grab, hold, press, and shake anything in their hands unaware of the strength in their arms.

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— Around 3 months, they are capable of grabbing (reflex grasp) and holding objects (whether suspended or not). They detect, explore, and feel objects with their hands and mouth.

— The learning process occurs through the senses and reflexes by assimilating reactions to stimuli and repetitive motion.

— The auditory system is functioning at the time of birth, but it needs neurological maturation and sensory experiences for the hearing functions to develop fully. Children demonstrate a lot of sensitivity to ambient sounds due to their immaturity and lack of experience. From birth, children begin to react to sounds and human speech. By around 2 months, most babies get quiet when they hear familiar voices. By 3 months, they locate and respond to sounds and make vocalizations that could be related to sensations associated with bathing and eating.

— They turn the head towards a sound and are attracted by objects that emit sounds that are known to them as being a part of their routine.

— Vision development is progressive. At birth, the eye focus of the child is best at about 20 cm. After 1 month, children are able to focus on objects up to 30 cm away, and by 3 months they can see some meters ahead. Visual acuity upon birth is 2,5 % to 5 %, and improves to near 20 % up to the third month.

— Are attracted by bright colours such as yellow and red although they cannot clearly distinguish between them. At the age of 2 months, the primary colour receptors are developed and they can distinguish between contrasts and the primary colours blue, red, and yellow.

3.1.2 Recommended toy sub-categories

The following toy subcategories in Table 1 are recommended for this age group.

Table 1 — Sub-categories of toys for children from birth to under 4 months of age

Sub-category	Starting age	Description and examples of appropriate toys
1.01	0 mo+	**Rattles and rings**
1.03	0 mo+	**Mobiles, with or without sound** – toys with miscellaneous figures and shapes to be mounted above the crib out of the reach of the child
1.47	0 mo+	**Musical boxes** – toys to be mounted on or near a crib with handle or button for adult activation
1.04	2 mo+	**Crib gyms and playmats** – mats with simple play features or activities; may include overhead structures that may have dangling objects intended for the child to reach, grasp, or hit
1.13	2 mo+	**Simple dolls and animals** – soft-stuffed dolls and animals made of fabric or plush with or without clothes and fixed details which cannot be removed
1.05	3 mo+	**Cradle and playpen toys** – balls, characters attached to cribs, strollers, or enclosures
1.09	3 mo+	**Squeeze toys** – constructed of soft material, with or without internal rattle or noise feature
1.25	3 mo+	**Cloth and similar soft material balls and geometric forms**

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3.2 Children with starting ages 4 months to under 8 months

3.2.1 Aspects related to the motor and cognitive development, and behaviour of children with starting ages 4 months to under 8 months

Usually, the following development and behaviour can be observed in children with starting ages 4 months to under 8 months.

— Are attracted by multi-sensory elements and have increasing interest in the environment surrounding them. Are in the oral phase and teeth begin to appear. Have natural involuntary motions. The learning process still occurs through the senses, especially the mouth, and reflexes, by assimilating reactions to stimuli and repetitive motions.

— Continue with hearing development and already use their visual and motor abilities to play with other people. Are capable of interacting with toys and objects. Begin to be aware of the existence and permanence of objects (objects continue to exist even when out of sight). Imitate simple motions and gestures.

— Are perfectly capable of locating sounds. Engage in vocal games that emphasize repetition of a same syllable like “mamama”, “papapa”, from 4 months on. Start interacting with the adult to develop language games with the child in which words are spoken in a repetitive way. Enjoy songs and sounds. From 4 to 6 months, they are more sensitive to sounds, and react to changes in voice tones and sounds.

— Use the limbs to move, rolling onto their sides, launching themselves forwards and backwards. Have greater ability to position themselves on the floor to play, start sitting by themselves, and crawling between 5 and 6 months.

— Have low gross and fine motor coordination, as well as involuntary motions of the limbs. The fine motor coordination of hands is still developing. Grab objects with the palm of hands (primitive grasping). Grab strongly, extend the palm of their hand to reach objects, and are capable of transferring objects from one hand to another.

— Have a progressive development of motions, such as holding, grabbing, pressing, shaking, pulling, and throwing objects onto the floor. Grabbing and holding are totally mastered around 6 months. They are capable of turning thick pages clumsily.

— At around 6 months, visual acuity and colour receptors are almost equal to that of an adult. They are attracted by red and yellow colours and printed patterns.

3.2.2 Recommended toy sub-categories

The following toy sub-categories in Table 2 are recommended for this age group.

Table 2 — Sub-categories of toys for children starting ages 4 months to under 8 months

Sub-category	Starting age	Description and examples of appropriate toys
1.02	4 mo+	**Teethers and teething rings**
1.07	4 mo+	**Activity playboards** – boards that are attached to the crib with various play features such as miscellaneous coloured shapes, shatterproof mirrors, spinners that rattle, buttons to push, parts that slide on guides, doors that open
1.11	4 mo+	**Bath toys** – animals, small boats, and floating objects
1.45	4 mo+	**Balls or cylinders** – clear material with visible contents
1.17	5 mo+	**Simple blocks, nesting toys, and stacking toys**
1.12	6 mo+	**Simple books made of textiles or plastic**
1.20	6 mo+	**Simple push/pull rolling toys (without cord or handle) which make sounds and/or have coloured lights** – wheeled animals or vehicles

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Table 2 *(continued)*

Sub-category	Starting age	Description and examples of appropriate toys
1.48	6 mo+	**Simple keyboards or hand-held toys with buttons that activate lights and sounds**
1.18	6 mo+	**Simple ball and track toys**

3.3 Children with starting ages 8 months to under 12 months

3.3.1 Aspects related to the motor and cognitive development, and behaviour of children with starting ages 8 months to under 12 months

Usually, the following development and behaviour can be observed in children with starting ages 8 months to under 12 months.

— May be anxious in case of the mother's (or father's) absence or in the presence of strangers. They become attached to objects (blanket, plush toy, etc.), which provide comfort and a sense of security. Start the development of imitative behaviours and are able to recognize and imitate voices, songs, and sounds, being able to imitate the latter two, after a number of repetitions.

— From 8 months, their babbling is similar to the sounds of their mother tongue. They start to imitate some actions that are familiar to them with the use of materials or toys, like cradling a doll (it is the first phase of symbolization), and understand the meaning of some gestures (kiss, goodbye, and come here). Start to express themselves by gestures (such as extending and contracting the hand when they want something), however, they still only recognize what is in their immediate field of vision. During this age range, they start to verbalize their first words and associate them with actions, but they limit themselves to the knowledge of their immediate surroundings. Therefore, intentional verbal and physical communication is already occurring. They are still attracted by elements that stimulate the senses.

— Start to relate objects to their intended purposes and have full awareness of an object's existence and permanence (continue to be aware of them even when out of sight). Are able to turn the pages of a book with more ease, understand simple cause and effect relationships, and are more aware of themselves. They begin to have a notion of heights and the dangers of falls.

— They have better body balance, interest in the movement and placement of objects (balance, motion), and also greater refinement and ability of movement. Have interest in exploring the environment, crawl, and sit unaided. Remain standing and make their first steps with support.

— Have muscle control and more developed fine motor coordination. Primitive clenching is more coordinated (holding, pincer grip) and are able to play instruments with the fingers (usually the forefinger). Use the forefinger with the purpose of pointing out objects and people.

— Are able to hold two objects simultaneously, but cannot coordinate them. Objects remain in their hands for longer time and they grab and beat the objects with more frequency. They practice their fine motor skills by grabbing, pushing, pulling, pressing, clapping, caressing, nudging, shaking, and scribbling. They are capable of scribbling with crayons and felt-tipped pens, but are not able to draw or write effectively.

3.3.2 Recommended toy sub-categories

The following toy sub-categories in Table 3 are recommended for this age group.

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Table 3 — Sub-categories of toys for children starting ages 8 months to under 12 months

Sub-category	Starting age	Description and examples of appropriate toys
1.14	8 mo+	**Roly-poly toys, bop-punching toys, and pop-up action toys** – figures and animals that rock in a to-and-fro motion, made of rigid or inflatable plastic, jack in the box, push-down spinning toys
1.16	8 mo+	**Books with thick (chunky) pages**
1.35	8 mo+	**Soft materials in various shapes for stacking**
1.31	9 mo+	**Learn to walk toys (walk behind)** – wheeled unit with a solid base and handle to support the child in the early stages of walking
5.02	9 mo+	**Dolls, imaginary animal characters, with no removable components** – dolls representing fictional characters, including animal or human forms

3.4 Children with starting ages 12 months to under 18 months

3.4.1 Aspects related to the motor and cognitive development, and behaviour of children with starting ages 12 months to under 18 months

Usually, the following development and behaviour can be observed in children with starting ages 12 months to under 18 months.

— May not be able to alternate their feet when pushing ride-on toys, they cannot yet pedal. The first ride-on toys do not need steering mechanisms because young toddlers may not be able to use them effectively. Also, they can imitate sports only in a playful way, without rules.

— Grow slower and have more developed motions and gross motor skills. Fine motor skills are in continuous development, but dexterity is still limited. On-going enhancement of eye-hand coordination.

— Start to choose their own toys and keep them close by. Can remember past events and still like to explore objects with hands and mouth. Use all the senses to explore the world. Have simplistic symbolic thinking.

— Around 13 months, they start to sing to themselves. Have increasing linguistic skills, present more verbalizations as a means of communication, and understand the meaning of a number of words. Distinguish repetitive and rhythmic sounds. Like to hear simple stories and can relate the pictures with the spoken word.

— Adore songs that involve the body (such as “10 Little Fingers”), appreciate rhythmic instruments and exploration play with musical instruments. Listen to rhymes and jingles, and are able to move objects according to the musical rhythm. Watch TV and other media and want to watch the same program repeatedly.

— Are more and more curious and like new objects. Exploration play is the predominant activity in this phase.

— They start to see differences in the size, shape, and mobility of things. Are capable of matching simple shapes and start to recognize simple shape fits such as triangular, square, rectangular, etc. in terms of exploration. They are able to feel different textures.

— Are capable of handling and carrying toys and light objects. Throw and kick soft and lightweight balls.

— Like small vehicle toys that can be pushed. Like toy cars with doors or compartments to carry toys.

— Like to turn knobs and dials that have low resistance. Hold, handle, pass objects from one hand to another and release them deliberately. Turn pages of books or magazines (several at one time), paying attention to images, not text. Identify an illustration upside down. Like to scribble and can use dough and modelling clays with adult assistance.

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