

Toy Safety Inspection Training Schedule

Day	AM / PM	Inspection item	Reference clause of EN - 71 standard	
6/14-6/15	Taipei to Riyadh			
1st day 6/16	AM	Visiting toy mall		
	PM	Q. & A. for Taiwan Toy Safety matter		
2nd day 6/17	AM	Assembly(CNS 4797.7)	4.2	
		Toy bags(CNS 4797.6)	6	
		Flexible plastic sheeting(CNS 4797-3 3.10)	6 & 8.25.1	
	PM	Material(CNS 4797-3 3.3)	4.6 & 4.1	
		Drop test (CNS 4797-3 4.24.2)	8.5	
		Torque test(CNS 4797-3 4.24.5)	8.3	
3th day 6/18	AM	Tension test(CNS 4797-3 4.24.6)	8.4	
		Accessibility edges(CNS 4797-3 3.6)	8.11 & 4.7	
	PM	Sharpness of points(CNS 4797-3 3.7)	8.12 & 4.8(a)	
		Small objects(CNS 4797-3 3.4)	8.5 & 5.1(a)	
4th Day 6/19	AM	Shape and size of certain toys(CNS 4797-3 3.5)	8.16 & 5.8	
		Compression test(CNS 4797-3 4.24.7)	8.8	
	PM	Protruding parts(CNS 4797-3 3.8)	4.9	
		Wires and rods(CNS 4797-3 3.9)	4.8(c)	
5th Day 6/20	AM	Cords and Elastics (Cords on toys)	8.19 & 8.20 & 5.4	
		Folding & Sliding mechanism (CNS 4797-3 3.12)	8.18.2& 4.10	
	PM	Holes, Clearance, Accessibility Mechanisms(CNS 4797-3. 13)	4.10.1(a) (b) (c)	
		Spring(CNS 4797-3 3.14)	4.10.4	
		Liquid filled toys(CNS 4797-3 3.24)	8.15 & 5.5	
6th Day 6/23	AM	Roller skates(CNS 4797-3 3.26)	4.15.1.1 & 7.10	
		Aquatic toys(CNS 4797-3 3.19)	4.18	
		Masks and helmets	4.14.2 (b)	
	PM	Braking(CNS 4797-3 3.20)	4.15.1.5 & 4.15.2.4	
		Free- wheeling toy bicycle(CNS 4797-3 3.21)	4.15.2.3	
7th Day 6/24	AM	Speed limitation of electrically driven toys(CNS 4797-3 3.22)	8.29 & 5.6	
		Toys intended to bear the mass of a child(CNS 4797-3 3.15)	4.15	
		Strength(CNS 4797-3 4.24.4)	8.22,3.1	
	PM	Enclosure(CNS 4797-3 3.16)	4.14 & 8.31	
		Projectiles(CNS 4797-3 3.18)	4.17	
		Mouth actuated toys(CNS 4797-3 3.25)	8.17& 4.11	
8th Day 6/25	AM	Tip over test(CNS 4797-3 4.24.3)	8.23.2& 4.16	
		Seams and materials(CNS 4797-3 4.24.6.2)	8.4.2.2	
	Q & A			
	PM	Flammability General(CNS 4797-1 3.1)	4.1	
Toy to worn on the head (CNS 4797-1 3.2)		4.2		
9th Day 6/26	AM	Soft filled toyswith a piled or textile surface(CNS 4797-1 3.5)	4.5	
	PM	Disguise costumes and other toys intend to be worn by a child (CNS 4797-1 3.3)	4.3	

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6/26		Toys intend to be aentered by a child (CNS 4797-1 3.4)	4.4
Q & A			
10th Day 6/27	AM	Marking and instruction(CNS 14276.6)	IEC 62115 -7
		Mechanical strength(CNS 14276.12)	IEC 62115 -13
		Construction(CNS 14276.13)	IEC 62115 -12
		Protection of cord and wires(CNS 14276.14)	IEC 62115 -14
	PM	Heating and abnormal operation(CNS 14276.8)	IEC 62115 -9
	Q & A		
6/28- 6/30	Riyadh to Taipei		

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TOYS — GENERAL
SAFETY REQUIREMENTS

TOYS — GENERAL SAFETY REQUIREMENTS

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TOYS — GENERAL SAFETY REQUIREMENTS

1. SCOPE AND FIELD OF APPLICATION

This Gulf standard is concerned with the general requirements for toys including classification, materials used, installation, safety and instructions of use.

2. COMPLEMENTARY REFERENCES

- 2.1 GS 578/1995 "Methods of Testing Toys - Part 1: Mechanical and Chemical Tests".
- 2.2 GS 579/1995 "Methods of Testing Toys - Part 2: Flammability Tests".

3. DEFINITION

Toy: An object or a number of stationary or moving objects manufactured to amuse the children and help them to develop their abilities in different stages up to the age of 14.

4. CLASSIFICATION

The toys shall be classified according to the following:

- 4.1 Construction
Plastic, metallic, wooden, glass, textiles or paper toys.
- 4.2 Design or shape
Small or big, movable or stationary, mould or solid, silent or sound-making, have constant shape or foldable.
- 4.3 Field of usage
 - a) According to age category.
 - b) According to type.
 - c) Toys for a single child or for a group of children.

5. GENERAL REQUIREMENTS

- 5.1 **Materials**
 - 5.1.1 Combustible materials

Toys and clothes for toys shall not be made of celluloid, similar materials of the same combustibility or materials of low combustibility but lead to fire or poisoning or other hazards in cases of particular uses according to its design.

Types of toys containing doll hair, toys having wide external surface or toys intended to be entered by a child shall have no material combustible or flame-producing gases or harmful vapors and the material which has pile surface shall be of slow combustible. Compound materials containing two or more different types shall be examined as a whole and in the same form used for the toy. Each material shall not be examined separately. Toys shall not be made of cellulose nitrate or be soaked in it and this does not prevent using colours, lacquers, varnishes and other similar materials which contain cellulose nitrate.

5.1.2 Extractable materials

Some toys are subjected to be put in mouth (like: whistle, music instruments) or can be sucked (like: rattles, teething rings, building cubes and soft toys) or wearing on the skin (like: bracelets, necklaces, and masks) and glove puppets where saliva or sweat may cause transferring toy's dye to the mouth, skin or clothes. In these cases, the dyes used shall be permissible by the concerned authority and shall be of the type of colours used in foodstuffs. The colours, dyes and other materials that can be extracted by the ordinary use shall not be used in quantities that can cause harm to children.

The colours shall not be harmful to health, and the lead or any other poisonous material shall not be in such quantities that exceed the permissible limits shown in Table 1.

Table (1)
Maximum Permissible Limits of
Elements to be Extracted in Painting Substance

Element	Max. allowed for the element in mg/kg from painting
Lead (Pb)	90
Antimony (Sb)	60
Chromium (Cr)	25
Barium (Ba)	250
Cadmium (Cd)	50
Mercury (Hg)	25
Selenium (Se)	500
Arsenic (As)	25

5.1.3 Metal

When the toy contains metal sheet(s):

- 5.1.3.1 The toy shall be installed in such a way that a child's finger cannot reach the metallic edges and that such edges are difficult to reach by ordinary use; by lifting any cap or part without use of certain tools.
- 5.1.3.2 Lead shall not be used among these metals. The metal edge shall be painted with a preservative material or bent internally, and be free of protrusions.

5.1.4 Plastic materials

Where plastic materials are used, they shall comply with the requirements in 5.1.2. When a break occurs creating sharp edges, the cross section shall be strong enough to sustain the ordinary use according to design.

When the thin sections are essential in the manufacture of toys, it shall be tough enough. The plastic toys shall have good appearance and good finishing so that they do not cause any harm to the child at normal use.

Table (2)
Maximum Permissible Limits for
Elements to be Extracted in Plastic and Painting Substance

Element	Max. allowed for the element in mg/kg from painting
Lead (Pb)	90
Antimony (Sb)	60
Barium (Ba)	500
Chromium (Cr)	60
Cadmium (Cd)	75
Selenium (Se)	500
Mercury (Hg)	60
Arsenic (As)	25

5.1.5 Glass

Glass shall not be used in the construction of toys for children under 36 months except that it may be used for glass balls for rattles, marbles and solid glass eyes.

Glass may be used in the construction of toys for children over 36 months only where its use is necessary to the function of the toy (for example optical toys), for reinforcement, textile glass and for solid glass marbles.

Scientific kits and scale models may contain small glass vessels. Where such vessels are intended to be exposed to heat, only borosilicate glass shall be used.

Where glass is used, its edges shall be rounded and, if necessary, protected. This does not apply to microscope slides and smooth edges.

5.1.6 Wood

When using wood in manufacturing large or small toys, the following shall be considered:

5.1.6.1 All edges shall be smooth and not sharp. No bolts or nuts shall protrude.

5.1.6.2 The wood shall be treated by preservative chemical substances to prevent rotteness.

5.1.6.3 The wood shall be painted with nontoxic polyurithane free of chromium, lead and cadmium.

5.1.7 Stuffing

All stuffing materials shall be clean, free of impurities, nontoxic, non-combustible, harmful or irritating and shall not contain hard and sharp objects.

The used stuffing materials shall not be re-used again, unless they are treated properly, to prevent any harm to health.

5.1.8 Liquid and gases

When gases and liquids are used in the toys, they shall not be hazardous to health.

5.1.9 Prohibited materials in the manufacture of toys

5.1.9.1 Cellulose nitrate or any similar flammable substance.

5.1.9.2 Ammonium nitrate.

5.1.9.3 Lithium hydroxide.

5.1.9.4 Asbestos.

5.1.9.5 Radioactive materials.

5.1.9.6 Di-ethyl hexyl phthalate.

5.2 Construction and safety requirements

5.2.1 General requirements

The following shall be fulfilled.

5.2.1.1 Any part of the toy shall not be separable when pressed or pulled by the child except the dummies.

5.2.1.2 Edges

Edges shall be smooth without acute angles to prevent injury and shall be covered with plastic or be painted.

5.2.1.3 Wires, bolts and bars

If there is bolt, wire or bar in the toy, they shall have no sharp edges that cause injury or scratches.

- 5.2.1.3.1 The toy shall be so constructed that the child cannot touch the edges by the finger and that they are not accessible in the ordinary use by removing any cover or cap or any removable part without using certain tools.
- 5.2.1.3.2 The edge of wire, bolt or bar shall be bent in a ring shape if these edges are essential in operating the toy.
- 5.2.1.4 Tubes and similar rigid components
The child shall be protected against tubes, bars and other similar rigid components protruding which may cause injury to the child.
- 5.2.1.5 Driving mechanisms
Driving mechanisms, such as gears, belts and pulleys, winding mechanisms or starting handles that rotate when unwinding, forming an integral part of a toy shall be so enclosed that moving parts are inaccessible to a child.
- 5.2.1.6 Propellers
Propellers shall be in a safe place far away from the child's finger as it may cause injury to the child if it is not shielded.
- 5.2.1.7 The toy shall be safe in such a way that it has no harmful effect on eyes.
- 5.2.1.8 The toy particularly which is intended to be used by a baby, shall have no bacterial effect. It shall be easily cleaned and sterilized.
- 5.2.1.9 The toy shall be free from any component used as foodstuff of any shape or construction.
- 5.2.1.10 The toy or its component shall not cause poisoning, suffocating or congesting ear or nozzle with small components.
- 5.2.1.11 The toy design shall be in such a way that does not cause any harmful effect on the psychology or behaviour of child.
- 5.2.2 Suitable requirements for certain types of toys
- 5.2.2.1 Sound-making mechanisms
Mechanical components and moving parts shall be covered and fixed firmly so that the child's finger cannot reach it. This shall not impede operation. When operating switch cannot be disconnected, it shall be of size and shape that does not allow the child's finger to be inserted between the switch and the toy body. When the inner parts are exposed because of the damage of the outer covering of the toy, it shall be such that it does not cause danger to the child.
In case the toy contains metal wire, bolts or bars with sharp edges that may cause injury, such parts shall be covered by an additional cover to the toy.

5.2.2.2 Hinged toys mechanisms

The hinged mechanism, restraints and arms shall have safety means to the child's finger to be protected against injury in case of sudden movement or destruction of the toy.

In case of existence of a door or a cover, a clearance shall be greater than 12 mm or less than 5 mm kept between the two separate parts regardless the location of door, cover or similar.

5.2.2.3 Toys intended to be used in a cradle, cot or perambulator

The free length of cords of toys intended for cradles, cots and perambulators shall not exceed 300 mm. This requirement applies to elastic cords when they are stretched by a force of 25 N, but it does not apply to elastic cords intended to be fixed across a cradle, cot or perambulator. Such elastic cords, when stretched by a force of 25 N, shall not exceed 750 mm in length and their length under these conditions shall not be more than 40% longer than their relaxed length.

5.2.2.4 Toys intended to be pulled along by the child

Cords of toys intended to be pulled along shall not include slip knots or fastenings likely to form a slip knot. In addition, cords of such toys for children under 36 months shall be not less than 1.5 mm thick.

5.2.2.5 Large toys intended to bear the weight of child

Large toys stable and mobile intended to bear the weight of a child shall stand level and firm in use. Wheeled toys of this nature with steering mechanism shall have this mechanism constructed in accordance with good engineering practice in regard to safety and robustness, and in particular the stability of the vehicle shall be ensured by the adoption of suitable stops on the steering mechanism which limit the movement of the wheels so that the balance of the vehicle is not distributed. In case of spiral springs having seats of different shapes with spiral base, springs shall be made of soft and unbreakable iron covered with a layer of paint or plastic to protect them against rust and corrosion. Gaps in the spiral spring shall be wide enough to ensure non-dose or pressure on the children's fingers during playing and moving. Such toys shall have no sharp edges or corners, or any unnecessary projection which could prove dangerous in normal use.

5.2.2.6 Toys which a child can enter

Such toys shall be large enough to contain a child and have cover, lid, or door, without locks in such a way that the child can easily open it. It shall have ventilating holes.

5.2.2.7 Swings, climbing frames, slides and similar constructions

On such structures, suspension hooks and shackles shall have a sound fixing so that it is impossible for them to become detached accidentally and they shall in themselves be of dimensions and material adequate to withstand damage. Swing seats shall be light in weight, whilst giving adequate strength, to

minimize the hazard from a chance blow, and shall have well-rounded edges and corners.

Swing seats with a safety bar designed for young children shall have the suspension points situated above the level of the safety bar in order to prevent overbalancing by the child leaning over the bar. Swings for very young children consisting of a framework of bar and ball construction around the seat, shall have the topmost side bars above the topmost front and back bars and safety belt.

Sliding surface shall be one piece of plastic or stainless steel and have an internally bent edge downward to prevent sharp protrusion in these edges while using.

Stabilizing swings and merry-go-round toys shall have reinforced plastic-covered stainless steel hands sustaining high temperatures.

Means for clamping down, or fixing or otherwise stabilizing swings and other apparatus for use out of doors shall be provided to minimize the risk of slipping or overturning.

Clear maintenance and erection instructions shall be given and the importance of any necessary periodic maintenance shall be mentioned in the usage instructions.

5.2.2.8 Soft toys and dolls

If the toy contains any components of glass, metal, wood, plastic or any material used as part of the external characteristics, it shall:

- 5.2.2.8.1 Be fixed in the toy in such a manner that it cannot be gripped by human fingernails or teeth.
- 5.2.2.8.2 Be fixed in toy by means such that it resists separation and unfastening when using a force 90 N.

Fastening tools shall not create hazard when the edges and points are exposed.

Attached eyes, noses and similar applied parts on soft toys should not be of glass. Suitable plastic materials should be used. That part of an eye or similar attachment forming the means of fastening shall not left as a sharp spike if it should become separated from the body or the attachment.

5.2.2.9 Aquatic toys

Toys whether inflatable or not and to be used for swimming or amusement in shallow water. Small toys used for amusement in the baths can be considered aquatic toys.

Aquatic toys shall be permanently marked with the following substance:

- Does not offer complete safety.
- Use only under adult supervision.
- Use only in water in which a child can stand without difficulty.

In addition to the above, the package of the toys shall be marked with the same information, or on the toy itself if the package is made from transparent material.

5.2.2.10 Wooden toys

Timber which is intended to bear the weight of a child shall be of adequate strength and good quality, without defects. All woodwork shall be smoothly finished on all edges, corners and surfaces. Screws shall be used in preference to nails and they shall be countersunk-head, or rounded-head wood screws.

5.2.2.11 Noise level

Toys which emit a continuous or spasmodic noise in normal use shall be controlled in intensity to a level below that at which a child's hearing is likely to be impaired.

5.2.2.12 Rust proofing

Toys intended for use out of doors and made wholly or essentially of ferrous metal, shall be adequately protected against corrosion by, for example, stove enamelling, galvanizing, metal spraying or painting. Drainage holes at lower level shall be provided in tubular framework to prevent any accumulation of water.

5.2.2.13 Rattles

Small solid particles and small stuffing materials shall be made of non-toxic or non-harmful materials when swallowed. Glass and smooth plastic balls having a diameter not more than 5 mm are applicable. Non-toxic smooth spherical roots and similarities, after being exposed to water, are also applicable.

5.2.2.14 Baby teething ring

It shall be made from natural rubber without any artificial material and it is allowed to use only the natural colouring material used for foodstuff.

5.2.2.15 Heat insulation

The handle of toys which are exposed to heat source shall be insulated to main temperature and shall not reach 50°C.

These toys shall be painted dry varnish or any other material. The painting material shall not be combustible due to the continuous operation (electric switches, handle of pans, iron, steam engines... etc), temperature shall not exceed 50°C during usage.

5.2.2.16 Electric insulation

The toys which are operated on voltage more than the safe value for extra low voltage (24 V) shall be insulated to protect child against any electric shock.

5.2.2.17 Projectile toys

5.2.2.17.1 The rate of kinetic energy for projectile, which is determined by the toy and not by the child, shall not exceed 0.5 joules when testing it.

- 5.2.2.17.2 The arrow shape projectile shall not be metal and not be of sharp edges and shall be covered by elastic cover in such a way that they do not become detached when subjected to a tensile force of 50 N.
- 5.2.2.17.3 Projectile shall not be made of metal. It is permissible to be supplied with a round magnet.
- 5.2.2.17.4 Projectiles shall contain a clear precaution showing the possible hazard resulting from its abuse or pointing at others.
- 5.2.2.18 Imitation protective equipment
The transparent material used in imitation protective equipment (e.g. glasses, diving masks...) shall be made so that it will not break when subjected to test. Imitation protective equipment and imitation protective helmets (e.g. motor cycle helmets, industrial safety helmets) shall be marked with the warning: "Does not provide protection in the event of accidents".
- 5.2.2.19 Kites and other flying toys
Strings for kites and other flying toys shall be made of non-metallic material.
The children shall be warned not to make kite flying near to overhead power lines and the kite shall be marked with the warning: "Do not use near overhead power lines".

6. INSTRUCTIONS FOR USE

- 6.1 Manufacturers shall give adequate and easily understood instructions in Arabic for erection, maintenance and use, e.g. periodical lubrication.
A warning shall be given in the case of toys which are inherently dangerous because of the dangerous materials required to make them function. Examples of this are instructions for the handling of chemicals, precautions in regard to electrical fittings and gas connections, the flammability of solvents, fuel for model engines and paints.
- 6.2 Any toy not suitable for direct connection to the electricity mains supply shall have a label either across the low voltage terminals, or on the toy, stating: "This must not be connected directly to the full mains voltage".
- 6.3 Attention should be drawn to highly flammable adhesives used in the construction of toys by a clear warning label on the container or tube and the assembly instructions should also bear a warning.
- 6.4 The hazard from non-combustible adhesives containing trichloro-ethylene or dichloromethane must also be pointed out by a label warning clearly against contact of the adhesive with the eyes and against continued inhalation.
- 6.5 Toys which discharge a missile as an unexpected surprise shall not be used. The risks, particularly to eyes, shall be fully explained to those playing with them. It is recommended that a warning be given for certain toys which can eject projectile or rocket that the article may be dangerous in the hands of children too young to fully understand its use.

6.6 The warning sign shall be permanent and not indelible and it shall have different colour from toy's colour. The height of letters shall be 3 mm at least. The warning sign shall be placed at not more than 100 mm from one of the valves when the toy is inflatable.

6.7 Playground equipment shall fulfill the following

6.7.1 Floor

It shall have shock absorbing material like sand, scrap wooden pieces or thick rubber and the following shall be taken into consideration at installation.

Table 3
Floor Substance and Safe Limit for Falling From Height

Floor substance	Safe limit for falling from height
Sand 25 cm	360 cm
Small gravel 20 cm	360 cm
Scrap wooden pieces	330 cm
Rubber 6 cm thickness	250 cm
Rubber 3 cm thickness	130 cm
Dry ground	70 cm
Asphalt	20 cm
Cement	10 cm

6.7.2 Heights

Precautions shall be taken into consideration for heights of playground by stating the method of installation of different heights for playground parts as for seats height to the ground, distance from seat to seat in a swing (height from under the seat not less 40 cm and the distance between two seats 60 cm).

6.7.3 Safety zone for playground

Each toy shall be attached with knowledge for safety zone during installation to avoid crowding for playground.

7. PACKAGING

Where flexible film bags of a gauge 190 mm or more and of thickness 38 μm or more are used, the following caution shall be printed.

"Plastic bags may be dangerous to the child. Keep away from the reach of children to avoid suffocation hazards".

8. MARKING AND LABELLING

The following information shall be written legibly and indelibly in Arabic and/or English:

- The name of manufacture and/or trademark and place of production;
- The suitable age of the child to use the toy;
- Statement if it needs the supervision of adults;
- Code number.

9. TEST PROCEDURE

The tests shall be carried out on toys according to the Gulf standards mentioned in 2.1 and 2.2.

10. RULES OF ACCEPTANCE AND REJECTION

10.1 Each consignment of toys shall be accompanied with a certificate stating that the toys comply with the requirements of this standard.

10.2 The toys shall be considered complying with all the requirements of this standard when the withdrawn sample from the consignment passes all the tests.

10.3 In case one or more toys in the sample fail to pass any of the tests, a second sample double the number of units as the first one shall be withdrawn from the same consignment and subjected to the tests.

The toys shall be considered complying with the requirements of this standard when all the units of the second sample pass the tests, otherwise the toys shall be considered non-complying.

ISO 8124-1 Toy Safety Inspection *(Based upon EN71-1 & ASTM F963)*

20121225VI

附件二
附表1

	Method	Requirement	Testing items	Equipments & Tools	Limitation <18M/18-36M/ 36-96M
1		4.	Label	Ref: Toy Goods Labeling Criteria	
2	5	4.3.	Material	○Chamber: <i>21±5 °C, >4H</i> <i>65±10 RH, >4H</i> <i>Testing time < 5min</i>	<i>Expanding material</i>
3	5.2	4.3 4.4 4.18 4.25	Small parts (after test 5.24 drop test)	○Small parts cylinder	<i>For <36M</i>
4	5.3 5.4 5.5 5.6	4.5.1 4.5.2 4.5.3 4.5.4	Shape, size and strength -(hemi)spherical/circular flared ends -Small balls test: -pompom -pre-school play figure	○clamps+ ●Test template A ●Test template B ○Test template C ○Test template C ●Test template B	<i>-Any part past the full depth of cavity of template -balls pass entirely through C</i>
5	5.7	4.6 4.7 4.13 4.14	Edges	●Articulated accessibility probe A,B	<i>Probe A: <36 months</i> <i>Probe B: >36 months</i>
6	5.8	4.6/4.9 4.29	Sharp-edge test	●Edge test apparatus(ISO 4287) ●PEPT type	<i>Force=6N, V=23±4mm/s</i>
7	5.9	4.7 4.9 4.29	Sharp-point test	●point tester	<i>Fail :test lamp light is on</i>
8	5.10	4.10	Plastic film or plastic bags in packaging and in toy	●Thickness measuring device	<i>Use 2 single sheets, one sheet must >0.038 mm and 1 % in 30mmX30mm</i>

ISO 8124-1 Toy Safety Inspection *(Based upon EN71-1 & ASTM F963)* 附表1

20121225V1

9	5.11	4.11.1 4.11.2	Test of cords: -Cord thickness -Self-retracting pull cord -electric resistance	<ul style="list-style-type: none"> ● <i>A force of 25 N</i> ● <i>extend fully +A force of 0.9kg</i> ● <i>Ohm mete</i> 	<i>Mean thickness should >1.5mm</i> <i>Cord retracts <6.4mm</i> <i>Resistance should >10⁸Ω/cm</i>
10	5.12	4.15.1.1 4.15.1.2 4.15.1.3	Stability and overload requirements -sideway stability test, feet available - sideway stability test, feet unavailable -fore and aft stability test	○ <i>Slope with 15° inclined surface</i>	<i>Tip over should > 1 min</i>
11	5.12.5	4.15.2	Overload test for ride-on toys and seats:	<ul style="list-style-type: none"> ○ <i><18 M: load 35 ± 0.3 kg</i> ○ <i>18-36 M: load 80 ± 1 kg</i> ○ <i>36-96 M: load 140 ± 2 kg</i> 	
12	5.12.6	4.15.3	Overload test for stationary floor toys :	○ <i>Slope with 10° inclined surface</i>	<i>Tip over should not within 1 min</i>
13	5.13	4.16.2	Test for closures and toy chest lids: -closure -lid	● <i>A force of 45N(weights)</i>	<i>>7000 opening-and-closing cycles</i>
14	5.14	4.17	protective equipment (helmets, hats and goggle)	○ <i>steel ball(d=16mm,15g)</i> <i>From 130cm height</i>	
15	5.15	4.18	Kinetic energy of projectile toys, bow/arrow $E_k(=1/2mv^2)$	● <i>Velocity reading machine</i> (unit=kg, m/s)	<i>E_k should < 0.08 J/cm²</i> <i>E_k/A should < 0.16 J/cm²</i>

ISO 8124-1 Toy Safety Inspection (Based upon EN71-1 & ASTM F963) 附表1
20121225V1

16	5.16	4.20 4.21	Braking test -Ride-on toy -brake for toy bicycle	<ul style="list-style-type: none"> ● <i>A force of (50±2) N</i> ● <i>A force of (30±2)N</i> ● <i>A mass of (50±0.5)kg</i> 	movement < 5cm
17	5.17	4.22	Speed limitation of electrically driven road-on toys	● <i>A mass of (25±0.2)kg</i>	max velocity < 8 km/h
18	5.18	4.23	Toys containing a heat source	● <i>Thermometer</i>	Hand touched T↑ < 25/30/35 Others: T↑ < 45/55°K
19	5.19	4.24	Liquid-filled toys	● <i>steel needle/5N/5s</i>	
20	5.20	4.25	Mouth actuated toys	● <i>mouth-actuated testing machine</i>	13.8 kpa/10 times
21	5.21	4.3.2	Expanding materials	● <i>Calliper</i>	
22	5.22	4.12	Folding/sliding mechanism	<ul style="list-style-type: none"> ● <i>A mass of (50±0.5)kg</i> ● <i>A mass of (25±0.2)kg</i> 	
23	5.23	4.1	Washable toys	<ul style="list-style-type: none"> ○ <i>washing-machine</i> ○ <i>tumble-dryer</i> 	
24	5.24 5.24.2 5.24.3	4.2	Drop test: Tip-over test(large toys, mass>4.5)	○ <i>impact surface: 3mm vinyl composition on >64mm concrete</i>	
25	5.24.5		Torque test	● <i>torque gauge</i>	>(0.45±2)N,>5s+10s
26	5.24.6		Tension test - Seam in soft toy -pompom	<ul style="list-style-type: none"> ● <i>A force of (70±2) N</i> ○ <i>seam clamp</i> 	(70±2N)
27	5.24.7		Compression test: -age <36 M -36-96 M	<ul style="list-style-type: none"> ● <i>A force of (114±2) N</i> ● <i>A force of (136±2)N</i> 	
28	5.24.8	4.9	Flexure test	○ <i>flexure tester</i>	
29	5.25	4.28	Sound pressure level test -Acoustic requirements	<ul style="list-style-type: none"> ● <i>furnished room>30m³</i> ● <i>microphone</i> 	<65/85/95/115dB

ISO 8124-1 Toy Safety Inspection (Based upon EN71-1 & ASTM F963) 附表1
20121225V1

30	5.26	4.29	Static strength for Toy scooters -for <20kg kid, -for 20-50kg kid	<ul style="list-style-type: none"> ○(50±0.5) kg sand bag ○(100±1) kg sand bag 	Maintain the load for 5 min
31	5.27	4.29.3	Dynamic strength for Toy scooters -for <20kg kid, -for 20-50kg kid	○ISO 8124-1 figure 30	
32	5.28	4.29.6	Toy scooters with handbrake	<ul style="list-style-type: none"> ○dynamometer ○platform (h=250mm, a mass of 4.8kg) ○(50±0.5) kg sand bag 	

ISO 8124-1(2009) test methods

1. General (p36)

2. Material (p37)

1 Material quality: All materials shall be visually clean and free from infestation. The materials shall be assessed visually by the unaided eye rather than under magnification.

2 Expanding materials: Toys and components of toys which fit entirely in the small parts cylinder when tested in accordance with small parts test shall not expand more than 50% in any dimension when tested in accordance with expanding materials. This requirement does not apply to seeds in growing kits.

3. Small parts(p37)

1 For children up to and including 36 months.

1.1 Toys intended for children up to and including 36 months, removable components thereof and components liberated during testing in accordance with reasonably foreseeable abuse tests shall not fit entirely, whatever their orientation, into the small parts cylinder when tested in accordance with small parts test.

1.2 The requirement also applied to fragments of toys, including, but not limited to, pieces of flash, slivers of plastics and pieces of foam or shavings.

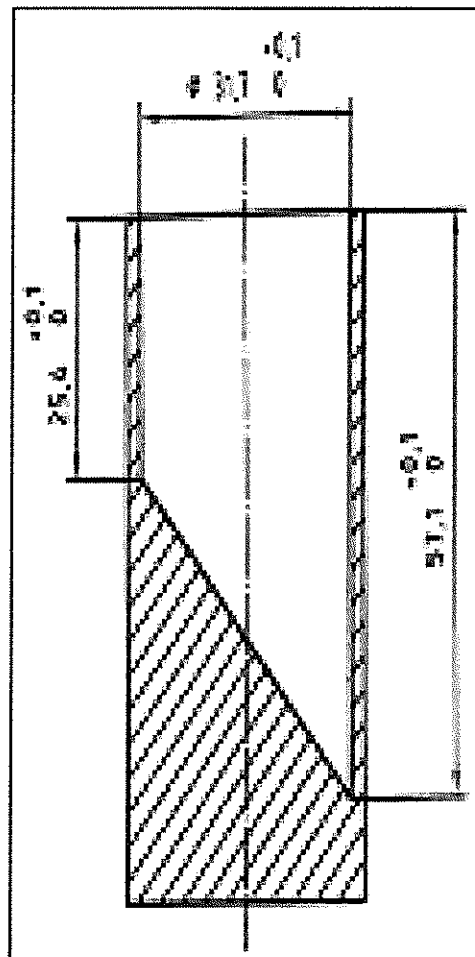
1.3 The following are exempted before and after subjecting the toy to the tests according to small parts test.

- paper books and other articles made of paper and pieces of paper;
- writing materials such as crayons, chalk, pencils and pens;
- modeling clays and similar products;
- finger paints, water colors, paint sets and paint brushes;
- fuzz
- balloon
- textile fabric
- yarn
- elastic and string.

2 Small parts test(ISO8124-1,EN71-1)

- 2.1 Place the toy, without compressing it and in any orientation, into the cylinder as shown in Fig. Small parts cylinder
- 2.2 Repeat the procedure of 2.1 with any removable component of the toy and any component liberated after testing according to reasonably foreseeable abuse tests
- 2.3 Determine whether the toy or any removable component or liberated component fits entirely within the cylinder.

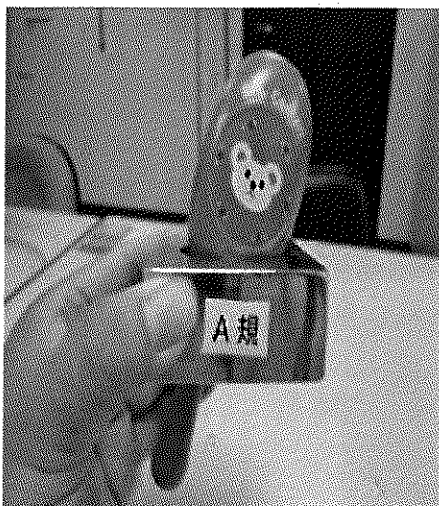
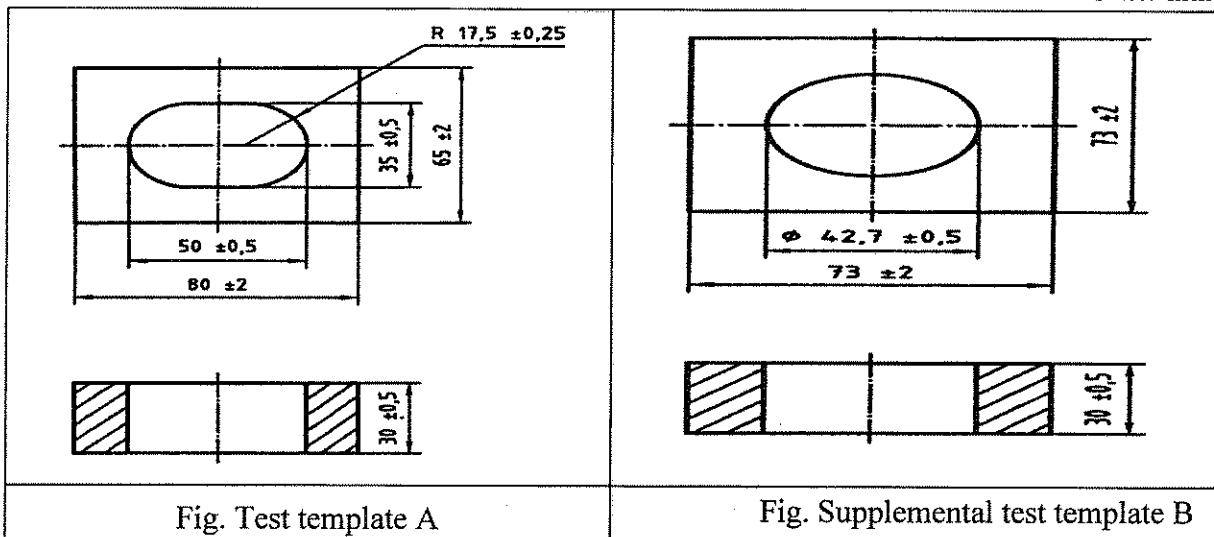
Fig. Small parts cylinder Unit: mm



4. Test for shape and size of certain toys

1. Position and clamp the test template A in Fig. Test template A so that the axis of the slot is essentially vertical and the slot is unobstructed at its top and bottom openings.
2. Orientate the toy to be tested in a position which would most likely permit the entry of the toy through the slot in the test template. Place the toy in the slot in the orientation stated so that the force on the toy is only the force due to its mass.
3. Determine whether any part of the toy penetrates past the full depth of the cavity of the test template.
4. Repeat the procedure for toys with nearly spherical, hemispherical or circular flared ends using supplemental test template B in Fig. Supplemental test template B, except that only the spherical, hemispherical or circular flared ends shall be presented to the template.

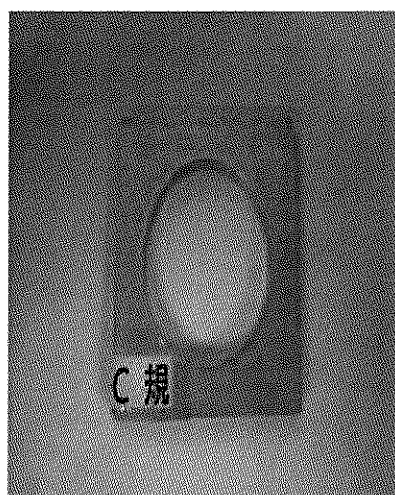
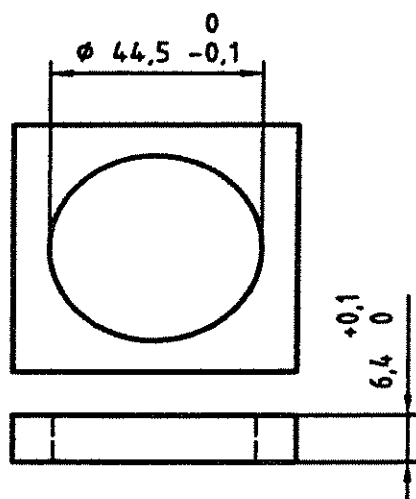
Unit: mm



5 Small balls test

- 5.1 Position and clamp the test template C shown in Fig. Test template C so that the axis of the slot is essentially vertical and the slot is unobstructed at its top and bottom openings.
- 5.2 Orientate the ball to be tested in a position which would most likely permit the entry of the ball through the slot in the test template. Place the ball in the slot so that the force on the toy is only the force due to its mass.
- 5.3 Determine whether the ball passes entirely through the test template.

Fig. Test template C Unit: mm



5. Sharp edge(p41)

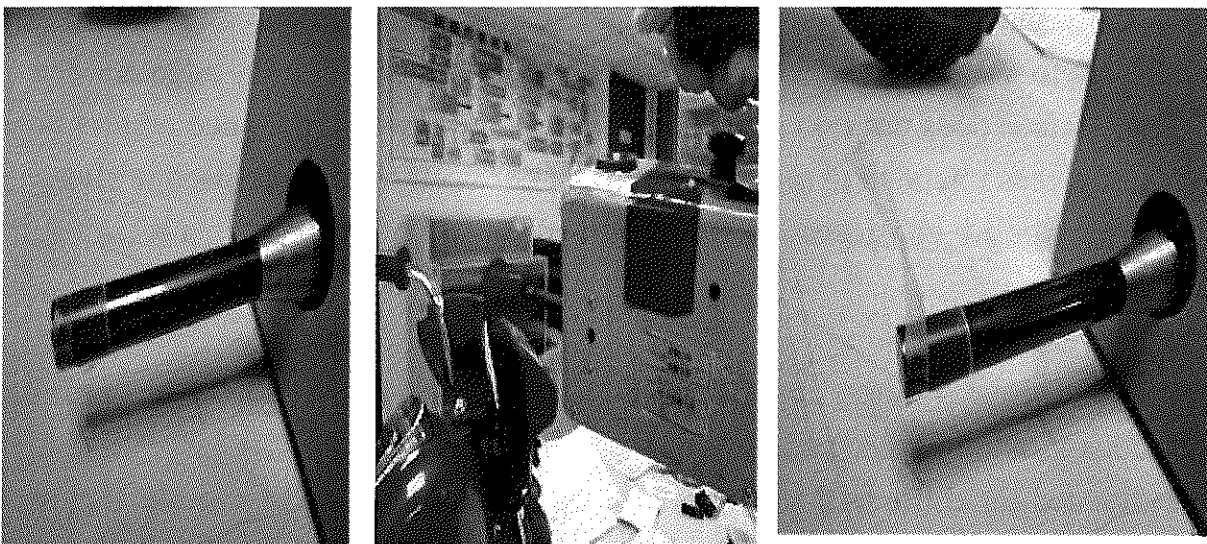
1 Accessible sharp edges of glass or metal

- 1.1 Accessible edges on toys intended for children under 96 months shall not be hazardous sharp edges of glass or metal when tested in accordance with sharp edge test. If an accessible edge fails the sharp edge test as given in sharp edgetest, the edge shall be assessed to determine whether it presents an unreasonable risk of injury, taking into account the foreseeable use and intended age grade of the toy.
- 1.2 Potentially sharp glass or metal edges shall be considered non-accessible if they lie adjacent to a surface of the test sample, and any gap between the edge and the adjacent surface does not exceed 0.5mm(e.g. in lap joints and hemmed edges).
- 1.3 Edges of pieces intended to serve as electrical conductors and microscope slides and cover slips are considered as functional edges and do not require a warning.

2 Functional sharp edges

- 2.1 Toys intended for children up to and including 36 months shall not have accessible hazardous functional sharp edges.
- 2.2 Toys intended for children from 36 months up to and including 96 months that by reason of their function (e.g. functional toy scissors and functional toy tool kits) necessarily include a sharp edge shall carry a proper warning or statement.
“Warning: This toy has sharp edge or sharp point”; or
“Warning: This toy has sharp edge and sharp point”.
- 2.3 Edges on metal toys: Accessible metal edges, including those of holes and slots, on toys intended for children under 96 months shall be free of hazardous burrs and leathering or shall be hemmed, rolled or curled shall incorporate a permanently affixed protective equipment or finish. Regardless of the manner in which edges are finished, they shall be subject to the sharp edge test as given in Sharp edge test
- 2.4 Edges on molded toys: Accessible edges, corners or mold parting areas of molded toys intended for children under 96 months shall be free of hazardous sharp edges produced by burrs and flash or so protected that hazardous sharp edges are not accessible.

2.5 Edges on exposed bolts or threaded rods: Accessible ends of threaded bolts or threaded rods shall be free of sharp edges and burrs, or the ends shall be covered by smooth protective caps so that sharp edges and burrs are not accessible. Any protective caps that are used shall be subject to the compression test, regardless of whether or not the protective cap is accessible to flat-surface contact during the appropriate test(s) in reasonably foreseeable abuse tests. Protective caps shall also subject to torque test followed by tension test.



Sharp edge test

1 Principle: A self-adhesive tape is attached to a mandrel which is then rotated for a single 360° revolution along the accessible edge being tested. The tape is then examined for the length of cut.

2 Apparatus The apparatus shall be as illustrated in Fig. Edge test apparatus.

- (1) Mandrel, made of steel: The test surface of the mandrel shall be free of scratches, nicks or burr and shall have a surface roughness Ra not greater than 0.40 μ m. This surface shall have a Rockwell C scale hardness of not less than 40. The diameter of the mandrel shall be (9.53 \pm 0.12) mm.
- (2) Device for rotating the mandrel and applying a force to it: The device shall be capable of rotating the mandrel at a constant tangential velocity of (23 \pm 4) mm/sec

during the central 75% of its 360° travel, starting and stopping of the mandrel being smooth. Portable or non-portable and of any suitable design, the device shall be capable of applying any force up to 6N to the mandrel, perpendicular to the mandrel axis.

- (3) Pressure-sensitive polytetrafluoroethylene (PTFE) tape: The thickness of the PTFE tape shall be between 0.066mm and 0.090mm. The adhesive shall be pressure-sensitive silicone polymer with a nominal thickness of 0.08mm. The width of the tape shall be not less than 6mm. The temperature of the tape during the test shall be maintained at (20 ± 5) °C.

(4) Test procedure

- (A) Ascertain that the edge to be tested is accessible by the method described in accessibility of a part or component. Support the toy in such a manner that the accessible edge to be tested does not bend or move when the force of the mandrel is applied. Ensure that the support is not less than 15mm from the edge to be tested.

- (B) If part of the toy has to be removed or disassembled in order to test a particular edge, and as a result, the rigidity of the edge being tested is affected, support the edge so that its stiffness approximates the edge stiffness in the assembled toy.

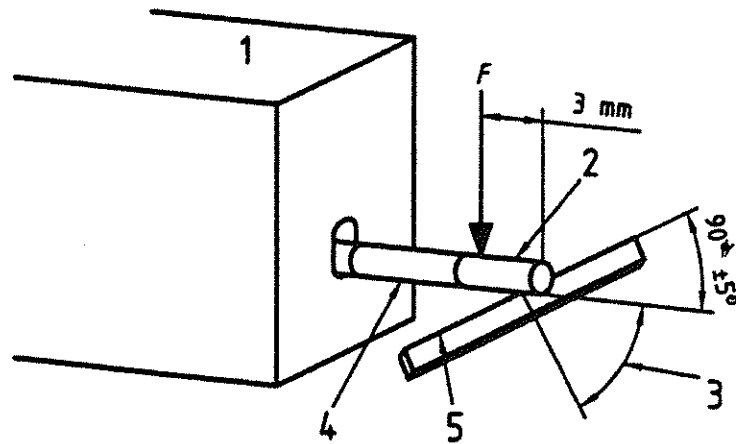
- (C) Wrap the mandrel with one layer of the tape to provide sufficient area for performing the test. Place the taped mandrel such that its axis is at the vertical line or $90\pm 5^\circ$ to test edge or at $90\pm 5^\circ$ to a tangent at the test point of a curved edge, and the tape is in contact with the sharpest part of the edge (i.e. the worst-case situation)
when the mandrel is rotated one full revolution (see Edge test apparatus).

- (D) Apply a force F of $6_{-0.5}^0$ N to the mandrel, 3mm from the leading edge of the tape, and rotate the mandrel 360° about its axis against the edge, ensuring that no relative motion occurs between the mandrel and the edge during rotation of the mandrel. If this procedure causes the edge to bend, apply the maximum force that will not cause the edge to bend.

- (E) Remove the tape from the mandrel without enlarging any cut in the tape or causing any score in the tape to become a cut. Measure the length of the tape which has contacted the edge during the test. Measure the length of tape that is cut, including any intermittent cuts. Calculate the percentage length of the tape which has

been cut during the test. If this is more than 50% of the contact length, the edge is a potentially hazardous sharp edge.

Fig Edge test apparatus



- 1: Device, portable or non-portable, to apply a known force F and rotation to the mandrel.
- 2. Single wrap of PTFE tape
- 3. Variable angle to seek worst-case situation
- 4. Mandrel
- 5. Edge under test



7. Sharp point test

1 Accessible sharp points

- 1.1 Accessible points on toys intended for children under 96 months, shall not be hazardous sharp points when tested according to sharp point test. If an accessible point fails the sharp point test as given in sharp point test, the point shall be assessed to determine whether it presents an unreasonable risk of injury taking into account the foreseeable use and intended age grade of the toy. Points of pencils and similar drawing implements are not considered as sharp points.
- 1.2 Potentially sharp points shall be considered non-accessible if they lie adjacent to a surface of the test sample and any gap between the point and the adjacent surface does not exceed 0.5mm.
- 1.3 Points, on toys intended for children up to and including 36 months, whose largest cross-sectional dimension is 2mm or less and that do not necessarily present a sharp point when tested in accordance with sharp point test, are considered to be potentially hazardous sharp points. They shall therefore be assessed to determine whether they present an unreasonable risk of injury, taking into account the foreseeable use and intended age grade of the toy.

2 Functional sharp points

- 2.1 Toys intended for children up to and including 36 months shall not have accessible hazardous functional sharp points.
- 2.2 Toys intended for children from 36 months up to and including 96 months that by reason of their function necessarily present the hazard of sharp points (e.g. a toy sewing machine with a needle) shall carry proper warning or statement on the packaging. **“Warning: This toy has sharp point”**.

3 Sharp point test

3.1 Principle: A point tester is applied to an accessible sharp point and it is observed whether or not the point being tested penetrates a specified distance into the sharp point tester. Depth of penetration of the point being tested determines sharpness. If the point can contact a sensing head that is recessed a distance of 0.38 ± 0.02 mm below the end cap and can move the sensing head a further 0.12 ± 0.02 mm against a $2.5_{-0.3}^{0.0}$ N force of

a return spring, the point shall be identified as potentially sharp.

3.2 Apparatus: A pointer tester is as shown in Fig. **Point tester**. A gauging slot Measuring 1.02 ± 0.02 mm wide by 1.15 ± 0.02 mm long in the end of the slotted cap of the point tester establishes two reference dimensions. The sensing head is recessed 0.38 ± 0.02 mm below the end cap.

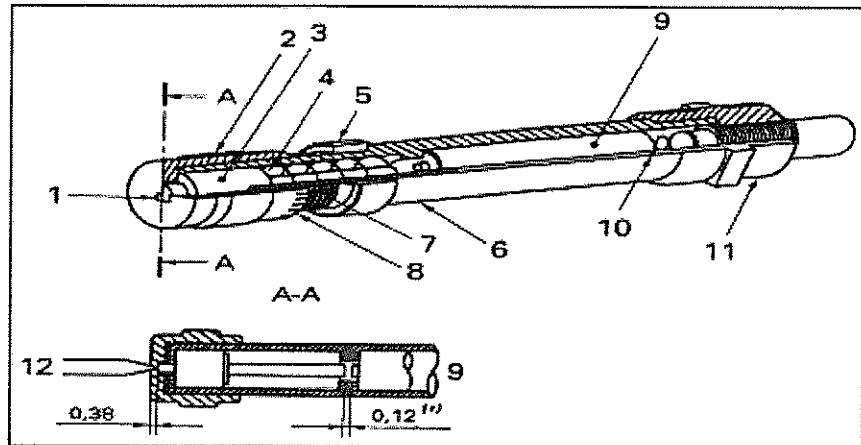
3.3 Test procedure

- (1) Ascertain that the point to be tested is accessible by the method described in accessibility of a part or component test. Support the toy to be tested in such a manner that the point does not move during the test. In most cases it will not be necessary to support the point directly; however, if necessary, support at not less than 6mm from the point to be tested.
- (2) If part of the toy has to be removed or disassembled in order to test a particular point, and as a result, the rigidity of the point being tested is affected, support the point so that its stiffness approximates the point stiffness in the assembled toy.
- (3) Adjust the point tester by loosening the locking ring and rotating it so that it moves toward the indicator lamp assembly a sufficient distance to expose the calibration reference mark on the barrel. Rotate the gauging cap clockwise until the indicator lamp lights. Rotate the cap anticlockwise until the sensing head moved a distance of 0.12 ± 0.02 mm from making contact with the dry cell, as shown in Fig Point tester
- (4) Insert the point, in the most onerous direction, into the cap slot and apply a force 4.5N to depress the spring as far as possible without shaving the point on the edges of the slot or extruding the point through the slot.
- (5) Observe if the indicator lamp is on.
- (6) If the point being tested penetrates a distance of 0.5mm or more into the gauging slot, causing the indicator lamp to light, and the point under test maintains its original shape while under a force of 4.5N, the test point is a potentially hazardous sharp point.

Note: Where the gauging cap includes micrometer markings, the distance may be readily achieved by rotating the cap anticlockwise until the appropriate micrometer marking corresponds with the calibration reference mark. The gauging cap may now be locked in this position by rotating the locking ring until it fits firmly against the cap.

Fig. Point tester

- 1: Gauging slot
- 2: Gauging cap
- 3: Sensing head
- 4: Loading spring
- 5: Locking ring
- 6: Barrel
- 7: Adjustment reference mark
- 8: Micrometer divisions
- 9: R03 dry cell
- 10: Electrical contact spring
- 11: Indicator lamp assembly and adaptor nut
- 12: Test point



(1) The gap is closed upon insertion of point sufficiently sharp to pass through gauging slot and depress sensing head 0.12mm. Electrical circuit is thereby completed and indicator test lamp lights. (Sharp point fails test)



8. Plastic film or plastic bags in packaging and in toy

5.10 p.45(do not apply to shrink film)

1 .The following are exempted from the requirements.

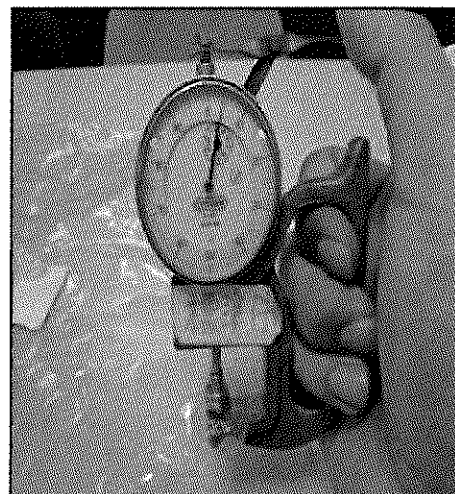
- (1)Bags which have an opening perimeter of less than 360mm;
- (2)Shrink film of less than 0.038mm nominal thickness that is in the form of an overwrap that would normally be destroyed when the packaging is opened.

2 .Flexible plastic film or flexible plastic bags without backing and of dimensions greater than 100mm x 100mm and used in toys shall either:

- (1)Have a nominal thickness of 0.038mm or greater, but shall never be less than 0.036mm thick or
- (2)Have perforations with well-defined holes (where material has been removed) of 1% minimum area on any maximum area of dimensions 30mm x 30mm.
- (3)For plastic balloons, the thickness requirement in 2.(1) applied to double layers of plastic sheeting (i.e. thickness is measured without inflating or destroying the balloon).

3. Determination of thickness of plastic film and sheeting

- (1)Prepare plastic bags by cutting the sides, without stretching, into two single sheets.
- (2)Using a measuring device capable of measuring thickness to an accuracy of 4 μ m, measure the thickness of any sheet at ten equidistant points across the diagonal of any 100mm x 100mm area.



9. Test Cords and elastics

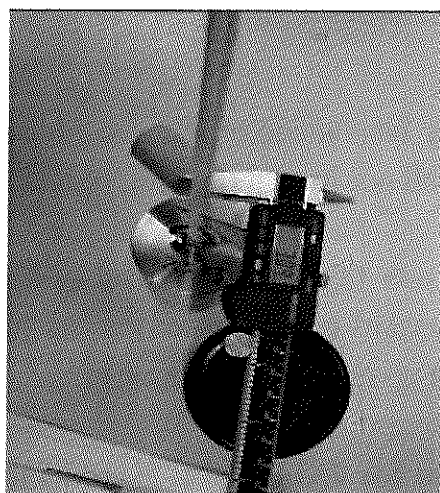
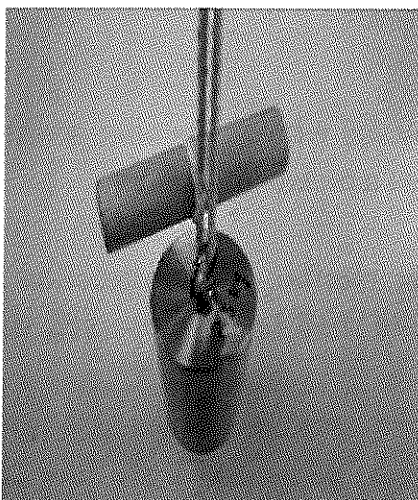
- 1 Cords and elastics in toys intended for children up to and including 18 months. The free length of cords or elastics that can tangle to form a loop or a fixed noose, included with or attached to toys, shall be less than 220 mm in length when measured under a tension of $25 \pm 2\text{N}$.
- (1) If cords or elastics or multiple cords or elastics can tangle and/or form a noose or a fixed loop in connection with any part of the toy, including beads or other attachments on the ends of cord or elastics, the perimeter of the noose or the fixed loop shall be less than 360mm when measured under a tension of $25\text{N} \pm 2\text{N}$.
- (2) Cords and elastics on toys shall have a mean thickness (smallest dimension) of 1.5 mm or more when measured in accordance with Test for cords- Determination of cord thickness. This does not apply to ribbons.
- 2 Self-retracting pull-cords in toys intended for children up to and including 18 months: Accessible cords used in cord-activated mechanisms shall not retract more than 6.4 mm when tested according to Test for cords-self-retracting pull-cords.
- 3 Cords for pull toys intended for children up to and including 36 months: Cords and elastics for pull toys intended for children up to and including 36 months, with a length of more than 220mm when measured under a tension of $25\text{N} \pm 2\text{N}$, shall not be provided with beads or other attachments that could tangle to form a noose or a fixed loop.
- 4 **Cords on toy bags:** Toy bags made of impermeable material with an opening perimeter greater than 360mm shall not have a drawing or a cord as a means of closing.
- 5 **Crib, crib gyms, playpen toys, mobiles and cords on similar toys:** Instruction that draw attention to the hazard of not removing the mobile shall be accompanied when the baby begins to push up on hands and knees.
- 6 **Cords, stings and lines for flying toys:** Hand-held cords, stings and lines over 1.8m long, attached to toy kites or other flying toys, when tested in accordance with Test for cords- Electric resistance of cords shall have an electrical resistance of more than 1080/cm. Toy kites and other flying toys shall carry a warning.
- “Warning: Do not use near overhead power line or during thunderstorms”*

7 Test for cords

7.1 Determination of cord thickness: Tension the cord under test with a force of $25 \pm 2\text{N}$. Measure the thickness of the cord at three to five locations along its length with a suitable device having an accuracy of $\pm 0.1\text{mm}$. For cords approaching 1.5mm in thickness, use a non-compressible method, e.g. an optical projector. Calculate the mean thickness of the cord. Determine whether the thickness complies with the requirements of Cords and elastics in toys intended for children up to and including 18 months

7.2 Self-retracting pull cords: Using a suitable clamp, position the toy so that the cord is vertical and the toy is in the most favorable position for retraction. Extend the cord fully and attach a mass of $0.9^{+0.05}_{-0.0}$ kg. For monofilament cords less than 2mm in diameter, attach a mass of $4.5^{+0.05}_{-0.0}$ kg. Determine whether the cord retracts more than 6.4mm.

7.3 Electric resistance of cords: Condition the samples for 7 hours minimum at a temperature of $25 \pm 3^\circ\text{C}$ and at a relative humidity of 50% to 65% and carry out the test in this atmosphere. Using an appropriate appliance, determine whether the electric resistance is more than $10^8 \text{ } \Omega/\text{cm}$.



10-11. Stability and overload requirements

4.15

1 Stability of **ride-on toys and seats**: The requirements apply to ride-on toys and stationary toys with seats, such as play furniture intended for children up to and including 60 months. Ride-on toys of spherical, cylindrical or other shape that do not normally have stable base (for example toy bicycles and similar toys) are not covered by these requirements.

1.1 Sideways stability, feet available for stabilization: Ride-on toys and stationary toys with seats, where the height of the seat from the ground is 27cm or more and where the feet and/or legs of the child are unrestricted in their sideways motion and thus are available for stabilization, shall not tip when tested in accordance with **stability test, feet available for stabilization**.

Stability test, feet available for stabilization

- (1) Place the toy on a smooth surface inclined $(10^{+0.5})^{\circ}$.
- (2) Turn the steering mechanism, if any, to a position in which the toy is most likely to tip. Chock wheels to restrict rolling, but allow caster to assume their natural position before chocks are applied.
- (3) Load the toy on its standing or sitting surface with the appropriate mass in accordance with Table.

Table Load for stability test

Age group	Load (kg)
Under 36 months	25±0.2
36 months and over	50±0.5

- (4) Apply the load so that the major axis is perpendicular to the true horizontal while the toy is on the specified incline.
- (5) Design the load so that the height of its center of gravity is 220±10mm above the seat surface. For all ride-on toy, secure the center of gravity of the load both 43±3mm rearward of the front-most portion of the designated seating area, and 43±3mm forward of the rear-most portion of the designated seating area.

1.2 Sideways stability, feet unavailable for stabilization: Ride-on toys and stationary toys with seats, where the feet and/or legs of the child are restricted in their sideways motion, such as by the enclosed sides of a toy automobile, shall not tip when tested in accordance with **stability test, feet unavailable for stabilization**.

Stability test, feet unavailable for stabilization

- (1) Perform the test in accordance with stability test, feet available for stabilization except that the slope shall be inclined ($15^{+0.5}_0$)° to the horizontal plane.
- (2) Observe whether the toy tips within 1 min after application of the load.

1.3 Fore and aft stability: Ride-on toys and stationary toys with seats, where the rider cannot easily use his/her legs for stabilization, shall not tip forward or backward when tested in accordance with **fore and aft stability test**.

Fore and aft stability test

- 1 Ride-on toys shall be tested with the steering wheel, if any,
 - (1) in a forward position, and
 - (2) at an angle of approximately 45° to the left of the forward position, and
 - (3) at an angle of approximately 45° to the right of the forward position.
- 2 For rocking horses, displace the toy to the limit of its bow.
Place the toy on a slope of a smooth surface inclined ($15^{+0.5}_0$)° to the horizontal plane. Test the toy facing both up and down the slope.
- 4 Load the toy as specified in **stability test, feet available for stabilization**
- 5 Observe whether the toy tips within 1 min after application of the load.

2 Overload requirements for ride-on toys and seats: Ride-on toys, stationary toys with seats and toys designed to support all or part of the mass of the child shall not collapse when tested in accordance with **Overload test for ride-on toys and seats** and **Dynamic strength test for wheeled ride-on toys**.

Overload test for ride-on toys and seats

- 1 Place the toy on a horizontal plane.
- 2 Load the toy on its standing or sitting surface with the appropriate mass in accordance with Table A.

Table A Loads for overload test

Age group	Load(kg)
Under 36 months	35 ±0.3
36 months up to and including 96 months	80 ±1.0
96 months and over	140 ±2.0

- 3 Conduct the test for overload requirements so that it will be consistent with the advertised mass capacity of the toy, if that mass is higher than the required load according to Table A.
- 4 Determine whether the toy collapses such that it does not conform to the relevant requirements.

Note: Manufacturers are recommended to consider the strength of the seat and seat pillar under dynamic conditions.

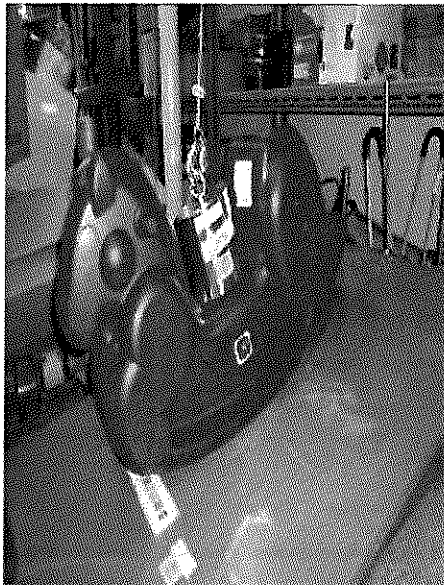
12. Stability of stationary floor toys:

5.12.6(p48)

Stationary floor toys greater than 760mm in height and weighing more than 4.5kg shall not tip when tested in accordance with **Stability test of stationary floor toys**.

Stability test of stationary floor toys

- 1 Place the toy on a slope with a smooth surface inclined $10\pm 1^\circ$ to the horizontal plane, with all Movable portions extended to their fullest travel, facing down the slope side.
- 2 Observe whether the toy tips within 1 min.

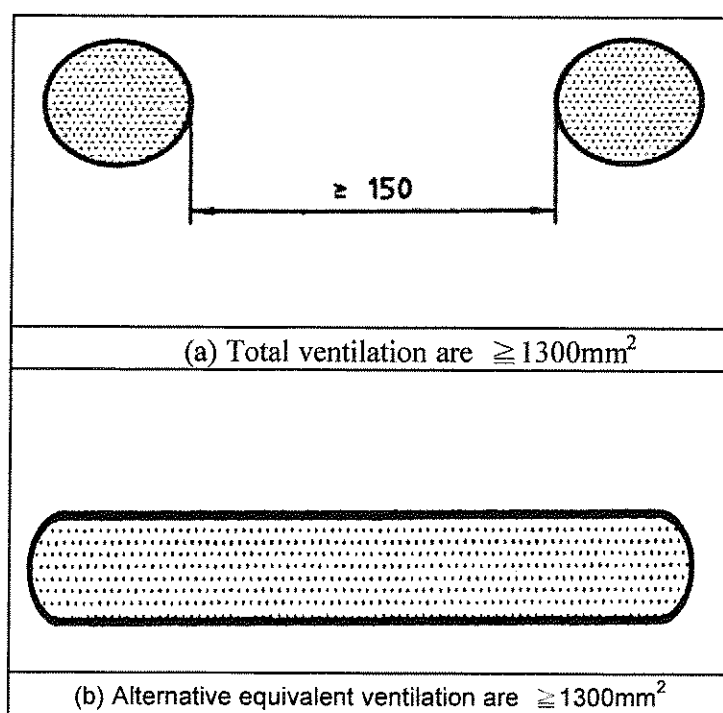


11. Enclosure

5.13(p48)

1 Ventilation: Any toy, made of impermeable material and having a door or lid, which encloses a continuous volume greater than 0.03m^3 and in which all internal dimensions are 150mm or more, shall provide means for breathing by the incorporation of unobstructed ventilation openings. These ventilation openings shall consist of a minimum of either two openings, each having a total area of at least 650mm^2 and placed at least 150mm apart (see Fig. (a)) or one opening that is the equivalent of the two 650mm^2 openings expanded to include the separation area (see Fig. (b)).

Fig. Example of an equivalent single ventilation opening Unit: mm



2 Closures

2.1 Lids, doors and similar devices: Closures, such as lids, covers and doors or devices similar to enclosures shall not be fitted with automatic locking devices. Closures shall be of a type that can be opened with a force of 45N or less when tested in accordance with **closure test**. This requirement notably precludes the use of buttons, zips and similar fastenings on lids, covers and doors.

Closure Test:

- (1) With the closure in a closed position, apply a force of 45 ± 1.3 N in an outward direction to the inside of the closure perpendicular to the plane of the closure and anywhere within 25mm from the geometric center of the closure.
- (2) Observe whether the closure opens.

2.2 Lid support for toy chests and similar toys

- (1) Toy chests and similar toys with vertically opening hinged lids shall be provided with lid-support mechanisms to prevent sudden collapse or dropping of the lid.
- (2) When tested in accordance with **Lid support test** the lid-support mechanism shall support the lid so that at no position in the arc of travel of the lid, from within 50mm of the fully closed position through an arc not to exceed 60° from the fully closed position, shall it drop more than 12mm under the influence of its own mass, except in the last 50mm of travel. The lid-support mechanism shall comply with this requirement before and after being subject to **7,000 opening and closing cycles**, as described in **Durability test for toy chest lids**
- (3) The lid-support mechanism shall not require adjustment by the consumer to ensure adequate lid support nor shall it require adjustment in order to comply with **Lid support for toy chests and similar toys** after being cycled in accordance with **Durability test for toy chest lid**
- (4) The lid and lid-support mechanism shall comply with the requirements in **Folding mechanisms**
- (5) Toy chests shall be accompanied by instructions for proper assembly and maintenance.

Lid support

- (1) Lift the lid to any position in its arc of travel to a distance greater than 50mm, but not through an arc of more than 60° from its fully closed position, as measured at the outermost edge of the lid. Release the lid and measure any dropping motion at a point in the approximate center of the outermost edge of the lid.
- (2) Determine whether the lid drops more than 12 mm.

Durability test for toy chest lids

Subject the lid to 7000 opening-and-closing cycles, where one cycle consists of raising the lid from its fully closed to its fully open position and returning it to fully close. To prevent undue stress on screws or other fasteners used to attach the lid support mechanism, care should be taken not to force the lid beyond its normal arc of travel.

Lid support for toy chests and similar toys

(1) Toy chests and similar toys with vertically opening hinged lids shall be provided with lid-support mechanisms to prevent sudden collapse or dropping of the lid.

- 3 Toys that enclose the head: Toys that enclose the head, such as space helmets, and that are made of impermeable material shall provide means for breathing by the incorporation of unobstructed ventilation areas close to the mouth and nose area. These ventilation areas shall consist of a minimum of either two holes, each hole having a total area of at least 650mm^2 and placed at least 150mm apart, or one opening that is equivalent to the two 650mm^2 holes expanded to include the separation area (see Fig.).

13. Protective equipment

1 All rigid toys that cover the face, such as goggles, space helmets or face shields, when tested in accordance with Impact test for toys that cover the face, shall not produce sharp edges, sharp points or loose parts which could enter the eye. This applies to toys with cut-out eye holes as well as items that cover the eyes.

2 Toys that simulate safety protective equipment and are intended to be worn by children (examples include construction helmets, sports helmets and fire-fighter helmets) and their packaging shall carry a warning.

Warning: " This safety protective equipment pertains to toy having no protective function."