



## Hong Kong Standards and Testing Centre

10 Dai Wang Street, Taipo Industrial Estate, NT, Hong Kong

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### Moveable Parts & Hinge - Line Clearance Requirements of Different Countries for Toys Testing

	<b>USA ASTM F963 - 08</b>	<b>Europe EN71 Part 1 : 2005</b>	<b>Australia/New Zealand AS/NZS ISO 8124-1:2002</b>
Hinges	Toys having a gap or clearance along the hinge line between a stationary portion and a movable portion that weighs more than 1/2 lb (0.2 kg) shall be so constructed that, if the accessible gap at the hinge line will admit a 3/16-in. (5-mm) diameter rod, it will also admit a 1/2-in. (13-mm) diameter rod at all positions of the hinge	Toys having two parts joined by means of one or more hinges and with a space between the assembled edges along the hinge line, shall be so constructed that this space, if it allows a 5 mm rod to be inserted, shall also allow a 12 mm rod to be inserted with the parts in any position. Does not apply to any part weighing more than 250g.	Toys having a gap or clearance along the hinge line between a stationary portion and a movable portion that weighs more than 0.25kg, shall be so constructed that if the accessible gap at the hinge line will admit a 5mm diameter rod, it shall also admit a 12mm diameter rod at all positions of the hinge. (4.12.3)
Folding Mechanisms	Toy furniture and other toys in which a folding mechanism, arm, or bracing is intended to support a child or comparable weight for normal use or reasonable foreseeable abuse shall have a safety stop or locking device to prevent unexpected or sudden movement or collapse of the article, or have adequate clearance to provide protection for the fingers, hands, and toes from crushing or laceration in the event of sudden movement or collapse of the article. '4.15.1	Toy pushchairs and perambulators, incorporating a handle or other structural member which can fold down over a child, shall have at least one main locking device and at least one secondary locking device. When tested the toy shall not collapse nor shall the locking device fail or disengage; and a minimum clearance of 12 mm between moving parts. Toys other than those above, with folding or sliding mechanisms intended to bear or capable of bearing the mass of a child, shall be so constructed that the space between moving elements, if it allows a 5 mm rod to be inserted, shall also allow a 12 mm rod to be inserted. '4.10.1	Toy pushchairs and perambulators, incorporating a handle or other structural member which can fold down over a child, shall have at least one main locking device and at least one secondary locking device. When tested the toy shall not collapse nor shall the locking device fail or disengage; and a minimum clearance of 12 mm between moving parts. Toys other than those above, with folding or sliding mechanisms intended to bear or capable of bearing the mass of a child, shall be so constructed that the space between moving elements, if it allows a 5 mm rod to be inserted, shall also allow a 12 mm rod to be inserted. (4.12.1)



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Toy Chests	<p>Toy chests with vertically opening, hinged lids shall be provided with lid-support The lid-support mechanism shall support the lid so that at no position in the arc of travel of the lid, shall it drop &gt; 0.50 in. (13 mm) under the influence of its own weight, The lid shall comply with this requirement before and after being subjected to 7000 opening and closing cycles. The lid-mechanism shall not require adjustment by the consumer, nor shall it require adjustment after being cycled. Lid-support mechanisms shall be constructed so that if the gap admits a 0.19-in. dia. rod, it will also admit a 0.50-in. dia. rod at all positions of the arc of travel. Does not apply to lid support mechanisms installed on the inside of the toy chest that are at least 12 in. from the front and side edges of the toy chest or its lid. '4.26.2</p>	<p>Toy chests with vertically opening, hinged lids shall be provided with lid-support The lid-support mechanism shall support the lid so that at no position in the arc of travel of the lid, shall it drop &gt; 12mm under the influence of its own weight, The lid shall comply with this requirement before and after being subjected to 7000 opening and closing cycles. The lid-mechanism shall not require adjustment by the consumer, nor shall it require adjustment after being cycled. Lid-support mechanisms shall be constructed so that if the gap admits a 5mm dia. rod, it will also admit a 12mm dia. rod at all positions of the arc of travel. Does not apply to lid support mechanisms installed on the inside of the toy chest that are at least 12 in. from the front and side edges of the toy chest or its lid. '4.14.1</p>	<p>Toy chests with vertically opening, hinged lids shall be provided with lid-support The lid-support mechanism shall support the lid so that at no position in the arc of travel of the lid, shall it drop 12mm under the influence of its own weight, The lid shall comply with this requirement before and after being subjected to 7000 opening and closing cycles. The lid-mechanism shall not require adjustment by the consumer, nor shall it require adjustment after being cycled. Lid-support mechanisms shall be constructed so that if the gap admits a 5mm rod, it will also admit a 12mm dia. rod at all positions of the arc of travel. Does not apply to lid support mechanisms installed on the inside of the toy chest that are at least 12 in. from the front and side edges of the toy chest or its lid. (4.16.2)</p>
Supporting Chains and Coil Springs	<p>Chains. that support the weight of a child, intended for children 36 months or less, shall be shielded if the chain is accessible and if a 0.19-in. dia. rod can be inserted between two links, with the chain in slack configuration '4.16.3.1. Coil Springs- (either compression or extension) that form part of a component that carries the weight of a child shall be shielded so as to prevent access during use or reasonably foreseeable abuse unless either of the following occurs. A 0.12-in. dia. rod cannot be inserted freely; or A 0.25-in. dia. rod can be inserted freely between the adjacent coils at all points in the action cycle when the spring is subjected first to a weight of 3 lb and then 70 lb. '4.16.1</p>	<p>Spiral springs shall not be accessible if the gap between two consecutive spirals is &gt; 3 mm in any position of use. This does not apply to springs that do not return to their original position after unloading. Extension helical springs shall not be accessible if the gap between two consecutive turns is &gt; 3 mm when the spring is subjected to a tensile force of 40 N. The requirement does not apply to springs that do not return to their original position after loading with a force of 40 N or to springs wound round a second component of the toy (e.g. a guiding rod) so that it is not possible to insert the accessibility probe A between consecutive coils by &gt; 5 mm. Compression helical springs shall not be accessible if the gap between two consecutive turns is &gt; 3 mm at rest and the spring, when the toy is used, can be subjected to a force of 40 N or more. '4.10.4</p>	<p>Spiral springs shall not be accessible if the gap between two consecutive spirals is &gt; 3 mm in any position of use. This does not apply to springs that do not return to their original position after unloading. Extension helical springs shall not be accessible if the gap between two consecutive turns is &gt; 3 mm when the spring is subjected to a tensile force of 40 N. The requirement does not apply to springs that do not return to their original position after loading with a force of 40 N or to springs wound round a second component of the toy (e.g. a guiding rod) so that it is not possible to insert the accessibility probe A between consecutive coils by &gt; 5 mm. Compression helical springs shall not be accessible if the gap between two consecutive turns is &gt; 3 mm at rest and the spring, when the toy is used, can be subjected to a force of 40 N or more. (4.14)</p>



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Accessible Clearances for Movable segments	If accessible clearances admit a 3/16-in. (5-mm) diameter rod, they shall also admit a 1/2-in. (13-mm) diameter rod in order to prevent the trapping of fingers.	None	For toy intended for children up to and including 96 months, if accessible clearances for movable segments can admit a 5mm diameter rod, they shall also admit a 12mm diameter rod. (4.13.2)
Driving mechanisms	Clockwork, battery-operated, inertial, or other power-driven mechanisms in toys intended for children aged 60 months or less shall not have any accessible part of the mechanism present a pinch or laceration hazard. *4.16.4	Shall be so enclosed that, when subjected to drop and impact test, they do not expose accessible sharp edges) or sharp points or otherwise present a hazard of crushing the fingers or other parts of the body. *4.10.2	Clockwork, battery-operated, inertial, or other power-driven mechanisms in toys shall be so enclosed that they do not expose accessible sharp edges or sharp points or otherwise present a hazard of crushing the fingers or other parts of the body. (4.13.4)
Chains or Belts for Ride on toys	Power transmission chains and belts in ride-on toys shall be shielded *4.16.3.2	Propelling chains shall have, at the side where the leg of the child is nearest the chain, a shield from the crank to the gear wheel and, on the opposite side, a shield around the crank The shield shall not have slots or holes with a width greater than 5 mm. *4.15.1.5.	Power transmission chain and belts in ride-on toys shall be shielded to make them inaccessible. It shall not be possible to remove the shield without the use of a tool. (4.13.3)
Winding Keys	Toys intended for children under 36 months of age that use winding keys that rotate. If the clearance between the flukes of the key and body of the toy will admit a 0.25-in. dia. rod, it shall also admit a 0.5-in. dia. rod at all positions of the key. There shall be no opening in the flukes of the key that can admit a 0.9-in. diameter rod. the requirement does not apply to those circular knobs to which the torque is applied *4.16.5	The shape and dimensions of winder keys or starting handles shall be such that the clear space between the key or the handle and the body of the toy, if it allow a 5 mm rod to be inserted shall also allow a 12 mm rod to be inserted. Any holes in keys or handles shall not permit the insertion of a 5 mm rod. *4.10.2 (c)	For children up to and including 36months.If the clearance between the flukes of the flukes of the key and the body of the toy can admit a 5mm diameter rod, it shall also admit a 12mm diameter rod at all position of the key. For keys covered by this requirement, there shall be no opening in the flukes of the key which can admit a 5mm diameter rod.(4.13.5)