

Test Report

Number: SZHH01845691

Applicant: HOUSE & HOME SDN BHD
LOT 6476 LORONG SG PULOH, BATU 6, JALAN
KAPAR, 42100, KLANG SELANGOR, MALAYSIA

Date: Oct 11, 2023

Attn: Phoebe

Sample Description:

One (1) set of submitted sample said to be :

Item Name : **Metal Twin Twin Bunk.**
Color : **Matte Black H01 & Matte White H02 & Silver (Gray or Grey) H03.**
Labelled Age Group : Not Specified.
Applicant Specified Age : Over 3 years.
Grading for Testing :
Packaging Provided by Applicant : Yes.
Additional Material and Wet Paint Provided : No.
Manufacturer : House & Home SDN BHD.
Country of Origin : Malaysia.
Country of Destination : USA/Canada.
Date Sample Received : Sep 11, 2023 & Oct 07, 2023.
Testing Period : Sep 11, 2023 – Oct 08, 2023.



Tests conducted:

As requested by the applicant, refer to attached page(s) for details.



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Conclusion:

Tested Samples
Submitted samples

Test Item
Ladder Strength Test
- As per the client's requirement

Result
Pass

Standard
ASTM F1427-21^{e1} - Standard Consumer Safety
Specification for Bunk Beds

Result
Pass

16 CFR Part 1513 - Requirements for Bunk Beds
Intended for Use by Children /
16 CFR Part 1213 -Requirements for Bunk Beds not
Intended for Use by Children

Pass

Requirement
U.S. CFR Title 16 (CPSC Regulations)
Mechanical and physical test

Result
Pass

Tested Sample
Tested components of
submitted samples

Test Item
Applicant's requirement on total mercury content

Result
Pass
(See remark)

Applicant's requirement with reference to U.S.
Consumer Product Safety Improvement Act 2008 Title I,
Section 101 for Total Lead content in Non-surface
coating materials (substrate)

Pass
(See remark)

Standard
U.S. CFR Title 16 Part 1303 total Lead content

Result
Pass
(See remark)

U.S. Consumer Product Safety Improvement Act 2008
Title I, Section 101 for total Lead content in surface
coating

Pass
(See remark)

Test Item
Dorel's requirement on total Lead (Pb) content

Pass
(See remark)

Dorel's requirement on total Lead and Mercury content in
surface coating

Pass
(See remark)

Dorel's requirement on total Lead and Mercury content in
Substrate

Pass
(See remark)

Applicant's requirement with reference to U.S. ASTM
F963-17 on soluble heavy elements test

Pass
(See remark)

Applicant's requirement with reference to Canada
Consumer Product Safety Act Toys Regulations SOR/2011-
17 and Amendment SOR/2022-122 Section 23 on toxic
elements test

Pass
(See remark)



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Tested Sample

Tested components of submitted samples

Standard

Applicant's requirement with reference to Canada Consumer Product Safety Act Surface Coating Materials Regulations SOR/2016-193 and Amendment SOR/2022-122 on Lead content

Result

Pass
(See remark)

Test Item

Applicant's requirement with reference to Canada Consumer Product Safety Act Toys Regulations SOR/2011-17 Section 27(a) on Heavy metal test

Result

Pass
(See remark)

Applicant's requirement with reference to Canada Consumer Products Containing Lead Regulations SOR/2018-83

Pass

(See remark)

Applicant's requirement with reference to U.S. ASTM F963-17 on total Lead content in surface coating

Pass

(See remark)

Applicant's requirement with reference to U.S. ASTM F963-17 on total Lead content in non-surface coating

Pass

(See remark)

Standard

U.S. ASTM F963-17 on soluble Cadmium content test

Result

Pass

(See remark)

Remark:

All test results stated in the report are quoted from the test report number SZHH01826491 dated on Jul 25, 2023 & SZHH01826658 dated on Jul 25, 2023 & SZHH01826752 dated on Jul 21, 2023 & SZHH01826601 Jul 25, 2023.

Authorized by:

For Intertek Testing Services Shenzhen Ltd
Xiamen Branch



Rachel L. Guo
General Manager



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Tests Conducted

1 Ladder Strength Test

As per the client's requirement, the submitted samples were subjected to the following tests.

Number of samples tested: One (1) piece

Executive summary:

Test Item	Test Method	Requirement / Limit	Result
Ladder Strength Test	In-house Method	Each step withstands an 800 lb load applied on the center of the step, load is distributed across a 3.5 in wide wooden for one minute without sudden structure failure or breakage.	P

Abbreviation: P = Pass

2 Safety Specification for Bunk Beds

Reference standard: ASTM F1427-21^{e1} - Standard Consumer Safety Specification for Bunk Beds.

Note: Lead in paints per 16 CFR 1303 is stated in this standard but not covered in the following test result.

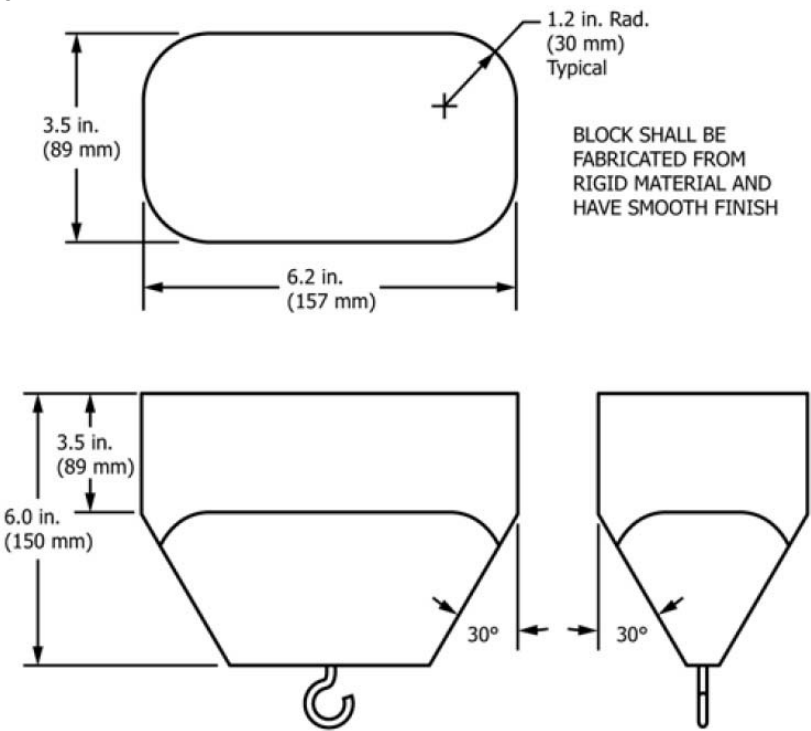
Number of sample tested: One (1) piece.

Executive summary:

Clause	Testing Items / Requirements	Assessment
1	Scope	
2	Referenced Documents	
3	Terminology	
4	Performance Requirements	
4.1	Vertical Protrusions	
4.1.1	All vertical protrusions along the top inside surfaces of any individual component (including but not limited to bed end structures and guard rails) of the upper bunk shall not extend more than 3/16 in. (4.8 mm) above the upper edge of the adjacent surface. Ladder stiles (uprights) shall not extend more than 3/16 in. (4.8 mm) above the upper edge of the adjacent surface.	P
4.1.2	Any cap used along the top surface of the upper bunk shall not have a vertical protrusion greater than 3/16 in. (4.8 mm) at the edge of the protrusion above the upper edge of the adjacent surface. If the cap is flush with or overhangs the edge of the corner post or other vertical protrusion, the maximum vertical protrusion shall not exceed 3/16 in. (4.8 mm). The cap shall have a maximum height of no more than 20 % of the width or diameter of the cap. At no point shall the cap overhang the post more than 1/16 in. (2 mm). The cap shall fit flush with the top of the corner post.	P



Tests Conducted

Clause	Testing Items / Requirements	Assessment
4.2	<p>Fit of Top Bed to Bottom Bed</p> <p>The bed post shall be designed so that the minimum height of lift to allow horizontal disengagement of the top bed from the bottom bed shall be 1 1/4 in. (32 mm), or a fastening mechanism may be used that will prevent the disengagement of the top bed from the bottom bed.</p>	NA
4.3	<p>Mattress and Foundation Size and Fit (Top Bed)</p> <p>There shall be no gaps between the interior bed structure and the edges of the mattress and foundation that will permit complete passage of the wedge block when tested in accordance with 5.2.</p> <p>5.2 Mattress and Foundation Size and Fit (see 4.3)—Upper Foundation:</p> <p>5.2.1 Place the intended mattress and foundation, as specified by the instructions, on the upper foundation support.</p> <p>5.2.2 Move the mattress and foundation horizontally to obtain the largest gap between the interior bed structure and the edge of the mattress and foundation.</p> <p>5.2.3 Insert the wedge block shown in Fig. 5, tapered side downwards, and in the most adverse orientation, into any gap and gradually apply a 45 lbf (200 N) vertically downwards force. Sustain the force for a period of 1 min.</p>  <p>FIG. 5 Wedge Block for Tests in Section 5</p>	P



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Clause	Testing Items / Requirements	Assessment
4.4	<p>Mattress Size and Fit (Lower Foundation)</p> <p>There shall be no space, between the edge of the manufacturer's recommended mattress and the interior boundary of any component(s) attached to lower bunk (for example, ladders, book shelves, desk), greater than 1.88 in. (48 mm) and smaller than 9 in. (229 mm), when tested in accordance with 5.3.</p> <p>5.3 Mattress Size and Fit (see 4.4)—Lower Foundation: 5.3.1 Place the intended mattress and foundation, as specified by the manufacturer, on the lower mattress support. 5.3.2 For components attached to the side of the lower bed, and for which the mattress height is above the side rail, move the mattress horizontally to obtain the largest gap between the mattress and the interior boundary of any attached component. 5.3.3 Determine if any space between the edge of the manufacturer's recommended mattress and the interior boundary of any attached component is between 1.88 in. (48 mm) and 9 in. (229 mm).</p>	P
4.5	Upper and Lower Foundation Support Systems	
4.5.1	The foundation support systems shall confine the horizontal position of the mattress and the foundation and shall prohibit the mattress and foundation from falling when the mattress or foundation is manipulated.	P
4.5.2	<p>In the event cross-members are utilized, a minimum of two per bed are required. If more than two cross-members are utilized, they shall be spaced so that the distance between adjacent cross-members or between the cross-members and the bed end structures will not permit complete passage of the wedge block or will allow complete passage of both the wedge block and a 9 in. (229 mm) diameter rigid sphere when tested in accordance with 5.9.</p> <p>5.9 Cross-Member Spacing—Place the wedge block shown in Fig. 5 into any opening tapered side first, and with the 3.5 in. dimension perpendicular to the cross-members. Determine if the wedge block cannot pass freely through the opening. If the wedge block can pass freely through the opening, the 9 in. (229 mm) diameter rigid sphere must pass freely through the opening. This requirement applies to both the upper and lower bunk foundation support systems.</p>	P
4.5.3	The foundation support system shall not be capable of being dislodged without the release of positive fastening devices or the use of hand tools.	P



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Clause	Testing Items / Requirements	Assessment
4.5.4	The foundation support system shall not fail when tested in accordance with 5.4. 5.4 Foundation Support System (see 4.5)—Center a sheet of 3/4 in. (19 mm) thick plywood with dimensions 19 in. (483 mm) by 37 in. (940 mm) on the manufacturer’s intended foundation (37 in. dimension parallel to the long axis of the bed), and place weights with a total mass of 400 lb (181.4 kg) on the plywood sheet. The weights shall be applied gradually and shall remain in place for a minimum of 5 min.	P
4.6	Side Rails	
4.6.1	<i>Bolt-On Side Rails</i> , that attach at their ends or on their side to the bed post, shall be secured at each end by two bolts with a minimum size of 1/4 in. (6.4 mm) diameter or ISO/ANSI size M6. For wood beds, these bolts shall be spaced a minimum of 1 1/2 in. (38 mm) apart on their centers. When the bolts are fully tightened in the assembled bed, no more than 1/4 in. (6.4 mm) of thread shall be exposed.	P
4.6.2	<i>Hook-On Side Rails</i> , securely attached to the bed post. Hook-on attachments shall require an additional action other than an upwards force to disengage.	NA
4.6.3	Side Rail Attachments There shall be no structural failure of bed side rail fastening systems when tested in accordance with 5.5. 5.5 Side Rails (see 4.6)—Apply a downward vertical force of 225 lbf (1000 N) gradually, 10 in. from the bed end structure, and sustain it for 30 s. Apply the force sequentially to each corner of the bed.	P
4.7	Guardrails	
4.7.1	Two guardrails shall accompany any bed in which the underside of the foundation is over 30 in. (762 mm) from the floor. Guardrails may be separate from or integral with the ladder.	P
4.7.2	Guardrails shall be attached in a manner that requires the intentional release of a fastening device or be so designed that they cannot be removed unless forces are applied sequentially in different directions.	P



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Clause	Testing Items / Requirements	Assessment
4.7.3	The upper edge of the guardrails shall be at least 5 in. (127 mm) above the sleeping surface when a mattress of a thickness that is the maximum specified by the manufacturer's instructions is used on the bed.	P
4.7.4	With no mattress on the bed, there shall be no openings in the rigid bed structure below the lower edge of any opening of the guardrail that would permit complete passage of the wedge block when tested in accordance with 5.6. 5.6 Guardrails (see 4.7)—Place the wedge block shown in Fig. 5 into any opening in the rigid bed structure below the level of any opening of the guardrail, tapered side first, and in the most adverse orientation, and gradually apply a 33 lbf (148 N) force in a direction perpendicular to the plane of the opening. Sustain the force for a period of 1 min.	P
4.7.5	A guardrail may terminate before reaching the bed end structure, providing there is no more than 15 in. (381 mm) between either end of the guardrail and the bed end structures in the same plane when measured at a point 5 in. (127 mm) above the sleeping surface as established by the maximum mattress thickness specified by the manufacturer. The second guardrail may terminate before reaching the bed end structure. If this guardrail terminates before reaching the bed end structure, there shall be no more than 0.22 in. (5.6 mm) between either end of the guardrail and the bed end structure when measured horizontally between the bed end structure and the nearest point on the guardrail.	NA
4.8	Bed Structure	
4.8.1	The upper edge of the upper bunk end structures for at least 50 % of the distance between the two posts at the head and foot of the upper bunk shall be at least 5 in. (127 mm) above the sleeping surface when a mattress and foundation of the maximum size and thickness specified by the manufacturer's instructional literature is used on the upper bunk.	P



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Clause	Testing Items / Requirements	Assessment
4.8.2	<p>There shall be no openings in the rigid end structures of the upper bunk/bunks that will permit the free passage of the wedge block when tested in accordance with 5.7.1. This requirement shall apply only to those portions of the bed end structure that are above the foundation support system of the upper bunk/bunks.</p> <p>5.7.1 Place the wedge block shown in Fig. 5 into any opening, tapered side first, and in the most adverse orientation. Determine if the wedge block can pass freely through the opening.</p>	P
4.8.3	<p>When tested in accordance with 5.7.2, there shall be no openings within the entire boundary of the lower bunk that will permit free passage of the wedge block, unless they are large enough to permit the free passage of a 9 in. (229 mm) diameter rigid sphere. This requirement does not apply to openings that are below the level of the lower bunk foundation support system. This requirement shall apply to that portion of the bed structure that is between the level of the lower bunk foundation support system and the level of the upper bunk foundation support system. Such openings include, but are not limited to, bed end structures, foundation, ladders, desks, or bookshelf components, or a combination thereof, as offered with the bed for purchase and designed to be attached to the bed structure.</p> <p>5.7.2 Lower Bunk Boundaries (see 4.8.3):</p> <p>5.7.2.1 Without a mattress or foundation on the lower bunk foundation support, place the wedge block shown in Fig. 5 into any opening, tapered side first, in the most adverse orientation. Determine if the wedge block can pass freely through the opening. If the wedge block passes freely through the opening, determine if a 9 in. (229 mm) diameter rigid sphere can pass freely through the opening.</p> <p>5.7.2.2 With the manufacturer's recommended mattress and foundation size in place, on the lower bunk foundation support, repeat the test in 5.7.2.1.</p>	P



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Clause	Testing Items / Requirements	Assessment
4.8.4	<p>When tested in accordance with 5.7.2.3 and 5.7.2.4, all portions of the boundary of any opening of the entire lower bunk boundary that permits free passage of a 9 in. (229 mm) diameter rigid sphere also must conform to the neck entrapment requirement.</p> <p>5.7.2.3 Insert the A section of the test template shown in Fig. 6 into the portion of the boundary of the opening to be tested, with the plane of the template in the plane of the opening and with the centerline of the top of the template aligned parallel to the centerline of the opening, until motion is stopped by contact between the test template and the boundaries of the opening (see Fig. 7). By visual inspection, determine if there is simultaneous contact between the boundary of the opening and both sides of the A section of the template. If simultaneous contact occurs, mark the contact points on the boundary of the opening and conduct the additional test described in 5.7.2.4.</p> <p>5.7.2.4 Place the neck portion of the B section of the template into the opening, with its plane perpendicular to both the plane of the opening and the centerline of the opening (see Fig. 8). If the neck portion of the B section of the template completely enters the opening (passes 0.75 in. (19 mm) or more beyond the points previously contacted by the A section of the template), the opening fails the test, unless its lower boundary slopes downward at 45° or more for the whole distance from the narrowest part of the opening the neck can reach to the part of the opening that will freely pass a 9 in. (229 mm) diameter sphere.</p>	P
4.9	Ladders	
4.9.1	A lean-on (slanted) or hang-on (vertical) ladder shall be supplied with each bunk bed set or the ladder may be incorporated as part of the bed structure. The ladder may be separate from or integral with the guardrail. The ladder shall be attached in a manner that prevents inadvertent disengagement, repositioning, or tilting while in use.	P
4.9.2	There shall be no openings between ladder structures that allow complete passage of the wedge block, unless they are large enough to permit the free passage of the 9 in. (229 mm) diameter rigid sphere. The width of the ladder shall be no less than 10 in. (254 mm) measured from the inside of the stiles. Vertical spacing of ladder steps shall be no greater than 12 in. (305 mm) when measured from the floor to the first step or between steps. When bed structures are used as ladders, vertical spacing may be up to 16 in. (407 mm).	P



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Clause	Testing Items / Requirements	Assessment
4.9.3	There shall be no openings between the ladder step and the upper bunk boundary that allow complete passage of the wedge block, unless they are large enough to permit the free passage of the 9 in. (229 mm) diameter rigid sphere.	P
4.9.4	<p>For ladders attached to the side of the lower bed and for which mattress height is above the side rail, there shall be no gaps between the edge of the manufacturers recommended mattress and the interior vertical stile between 1.88 in. (48 mm) and 9 in. (229 mm) when tested in accordance with 5.3.</p> <p>5.3 Mattress Size and Fit (see 4.4)—Lower Foundation: 5.3.1 Place the intended mattress and foundation, as specified by the manufacturer, on the lower mattress support. 5.3.2 For components attached to the side of the lower bed, and for which the mattress height is above the side rail, move the mattress horizontally to obtain the largest gap between the mattress and the interior boundary of any attached component. 5.3.3 Determine if any space between the edge of the manufacturer’s recommended mattress and the interior boundary of any attached component is between 1.88 in. (48 mm) and 9 in. (229 mm).</p>	NA



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Clause	Testing Items / Requirements	Assessment
4.10	<p>Metal Beds: Frame and Fastenings</p> <p>There shall be no separation of any of the attachments of the foundation support system to the end structures of the bed when tested in accordance with 5.8.1.1 and 5.8.2.</p> <p>5.8 Metal Beds—Frame and Fastenings: 5.8.1 For testing in accordance with 5.8.1.1, the bed shall be prevented from sliding in a manner that does not prevent changes of angle that may take place in the bed structure. 5.8.1.1 Position a test load of 165 lb (75.0 kg) at the center of the upper foundation support system on an area not to exceed 12 in. (305 mm) square (if foundation support systems will not permit the test load to be so positioned, it is permissible to add a platform to support the test load in such a way as to not increase the structural integrity of the bed). Apply an alternate force of 67 lbf (298 N) for 10 000 cycles at each point in the order ABCD or AB followed by CD at a rate not more than 24 loads per minute (see Fig. 9). The points for applying the test forces shall be located as near the center of the vertical bunk bed support as practicable at the height of the upper foundation support system. 5.8.2 After testing in accordance with 5.8.1.1, remove the 165 lb (75.0 kg) load and apply a 67 lbf (298 N) force in directions most likely to cause separation between the end structure and foundation support system. The force shall be applied at each point of attachment of the foundation support system to the end structure (point of applications shall be as close as practical to the point of attachment). The force shall be applied to either the end structure or foundation support system, whichever appears most likely to cause separation.</p>	P



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Clause	Testing Items / Requirements	Assessment
5	Test Methods	
6	Marking and Labeling	P
7	Instructional Literature	P

Abbreviation: P = Pass; F = Fail; NA = Not Applicable

3 16 CFR Part 1513-Requirements for Bunk Beds Intended for Use by Children/16 CFR Part 1213-Requirements for Bunk Beds Not Intended for Use by Children

With reference to 16 CFR Part 1513 - Requirements for Bunk Beds & 16 CFR Part 1213 - Safety Standard for Entrapment Hazards in Bunk Beds.

Executive summary:

Clause	Requirements	Assessment
1513.3(a)/1213.3(a)	Guardrails	
(1)	Any bunk bed shall provide at least two guardrails, at least one on each side of the bed, for each bed having the underside of its foundation more than 30 inches (760 mm) from the floor.	P
(2)	One guardrail shall be continuous between each of the bed's end structures. "Continuous" means that any gap between the guardrail and end structure shall not exceed 0.22 inches (5.6 mm) (so as to not cause a finger entrapment hazard for a child).	P
(3)	The other guardrail may terminate before reaching the bed's end structures, providing there is no more than 15 inches (380 mm) between either end of the guardrail and the nearest bed end structures.	NA
(4)	For bunk beds designed to have a ladder attached to one side of the bed, the continuous guardrail shall be on the other side of the bed.	NA
(5)	Guardrails shall be attached so that they cannot be removed without either intentionally releasing a fastening device or applying forces sequentially in different directions.	P
(6)	The upper edge of the guardrails shall be no less than 5 inches (130 mm) above the top surface of the mattress when a mattress of the maximum thickness specified by the bed manufacturer's instructions is on the bed. This requirement does not prohibit a wall-side guardrail that terminates in a quarter-circle bend and attaches to the side rail of the upper bunk foundation.	P



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Clause	Requirements	Assessment
(7)	With no mattress on the bed, there shall be no openings in the structure between the lower edge of the uppermost member of the guardrail and the underside of the upper bunk's foundation that would permit passage of the wedge block shown in Figure 1 of this part when tested in accordance with the procedure at §1513.4(a)/1213.4(a).	P
1513.3(b)/1213.3(b)	Bed end structures	
(1)	The upper edge of the upper bunk end structures shall be at least 5 inches (130 mm) above the top surface of the mattress for at least 50 percent of the distance between the two posts at the head and foot of the upper bunk when a mattress and foundation of the maximum thickness specified by the manufacturer's instructions is on the bed.	P
(2)	With no mattress on the bed, there shall be no openings in the end structures above the foundation of the upper bunk that will permit the free passage of the wedge block shown in Figure 1 when tested in accordance with the procedure at §1513.4(b)/1213.4(b).	P
(3)	When tested in accordance with §1513.4(c)/1213.4(c), there shall be no openings in the end structures between the underside of the foundation of the upper bunk and upper side of the foundation of the lower bunk that will permit the free passage of the wedge block shown in Figure 1, unless the openings are also large enough to permit the free passage of a 9-inch (230-mm) diameter rigid sphere.	P
(4)	All portions of the boundary of any opening required by §1513.4(c)(1) and (2)/1213.4(c)(1) and (2) to be probed by the wedge block of Figure 1, and that permits free passage of a 9-inch diameter sphere, must conform to the neck entrapment requirements of §1513.4(c)(3)/1213.4(c)(3).	P
1513.5/1213.5	Marking and labeling	P
1513.6/1213.6	Instructions	P

Abbreviation: P = Pass; NA = Not Applicable



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4 Physical and Mechanical Test

Test requirement: U.S. Code of Federal Regulations Title 16 Part 1500.50, the hazards of sharp points, sharp edge and small parts are assessed both before and after applicable use and abuse tests.

	No. of Sample Tested	Sharp Point (1500.48)	Sharp Edge (1500.49)	Small Part * (1501)
As received	1	P	P	P
Impact (1500.53(b))	1	P	P	P
Flexure (1500.53(d))	0	NA	NA	NA
Torque (1500.53(e))	1	P	P	P
Tension (1500.53(f))	1	P	P	P
Compression (1500.53(g))	1	P	P	P

Abbreviation: P = Pass NA= Not Applicable

* = As requested by the applicant, the hazards of small part was assessed in this report.

5 Total Mercury (Hg) Content

Acid digestion method was used and total Mercury content was determined by Inductively Coupled Argon Plasma Spectrometry.

Element	Result (mg/kg)	Reporting limit (mg/kg)	Limit (mg/kg)
	Tested component		
	(1)		
Mercury (Hg)	ND	10	10

ND = Not detected

Tested Components: See component list in the last section of this report

6 Total Lead (Pb) Content in Non-Surface Coating Materials (Substrate) (U.S. CPSIA Section 101)

As per Standard Operating Procedures for Determining total Lead (Pb) in children's products, test methods CPSC-CH-E1002-08.3 and/or CPSC-CH-E1001-08.3 were used and total Lead content was determined by Inductively Coupled Argon Plasma Spectrometry and/or Atomic Absorption Spectrometry.

Element	Result (ppm)	Reporting Limit (ppm)	Limit (ppm)
	Tested Component		
	(4)		
Lead (Pb)	ND	10	100



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The above limit was quoted according to U.S. Consumer Product Safety Improvement Act 2008 Title I, Section 101 for total Lead content in Non-surface coating materials.

ppm = parts per million = mg/kg
 ND = Not detected (less than reporting limit)

Tested components: See component list in the last section of this report

7 Total Lead (Pb) Content in Surface Coating (U.S. 16 CFR Part 1303 and CPSIA Section 101)

As per Standard Operating Procedure for Determining Lead (Pb) in paint and other similar surface coatings, test method CPSC-CH-E1003-09.1 was used and total Lead content was determined by Inductively Coupled Argon Plasma Spectrometry.

Element	Result (ppm)	Reporting Limit (ppm)	Limit (ppm)
	Tested Component		
	(1)		
Lead (Pb)	ND	10	90

The above limit was quoted according to U.S. CFR Title 16 Part 1303 and U.S. Consumer Product Safety Improvement Act 2008 Title I, Section 101 for total Lead content in surface coating.

ppm = parts per million = mg/kg
 ND = Not detected (less than reporting limit)

Tested components: See component list in the last section of this report

8 Total Lead (Pb) Content

With reference to CPSC-CH-E1002-08.3 and/or CPSC-CH-E1001.08.3 and/or CPSC-CH-E1003-09.1, followed by Inductively Coupled Argon Plasma Spectrometry.

(1) For surface coating

Element	Result (mg/kg)	Reporting limit (mg/kg)	Limit (mg/kg)
	Tested component		
	(1)		
Lead (Pb)	ND	10	90

(2) For substrate

Element	Result (mg/kg)	Reporting limit (mg/kg)	Limit (mg/kg)
	Tested component		
	(4)		
Lead (Pb)	ND	10	100



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ND = Not detected

Tested Component(s): See component list in the last section of this report

9 Total Lead (Pb) and Mercury (Hg) Content in Substrate

With reference to test method CPSC-CH-E1002-08.3 and/or CPSC-CH-E1001-08.3, total lead and mercury content was determined by Inductively Coupled Argon Plasma Spectrometry.

Element	Result (mg/kg)		Reporting limit (mg/kg)	Limit (mg/kg)
	Tested component			
	(4)			
Lead (Pb)	ND		10	90
Mercury (Hg)	ND		5	ND

ND = Not detected

Tested Components: See component list in the last section of this report

10 Total Lead (Pb) and Mercury (Hg) Content in Surface Coating

With reference to test method CPSC-CH-E1003-09.1, total lead and mercury content was determined by Inductively Coupled Argon Plasma Spectrometry.

Element	Result (mg/kg)		Reporting limit (mg/kg)	Limit (mg/kg)
	Tested component			
	(1)			
Lead (Pb)	ND		10	90
Mercury (Hg)	ND		5	10

ND = Not detected

Tested Components: See component list in the last section of this report

11 Heavy Elements Analysis

As per Section 4.3.5 and Section 8.3.2 to 8.3.5 of the ASTM Standard Consumer Safety Specification on Toy Safety F963-17, heavy elements migration content were determined by Inductively Coupled Argon Plasma Spectrometry.



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Element	Result (ppm)				Reporting limit (ppm)	Limit (ppm)
	Tested component					
	(1)	(2)	(3)	(5)		
Sol. Barium (Ba)	ND	ND	ND	ND	5	1000
Sol. Lead (Pb)	ND	ND	ND	ND	5	90
Sol. Cadmium (Cd)	ND	ND	ND	ND	5	75
Sol. Antimony (Sb)	ND	ND	ND	ND	5	60
Sol. Selenium (Se)	ND	ND	ND	ND	5	500
Sol. Chromium (Cr)	ND	ND	ND	ND	5	60
Sol. Mercury (Hg)	ND	ND	ND	ND	5	ND
Sol. Arsenic (As)	ND	ND	ND	ND	2.5	25

Sol. = Soluble
ppm = part per million = mg/kg
ND = Not detected

Tested Components: See component list in the last section of this report

12 Total Lead (Pb) Content (CCPSA SOR/2016-193 and Amendment SOR/2022-122)

As per Method C-02.2.2 published in Health Canada Product safety reference manual Book 5 - Laboratory Policies and Procedures Part B: Test Methods Section, acid digestion method was used and determined by Inductively Coupled Argon Plasma Spectrometry.

Element	Result (mg/kg)		Detection Limit (mg/kg)	Limit (mg/kg)
	Tested Component			
	(1)			
Lead (Pb)	ND		10	90

The above limit was quoted according to Canada Consumer Product Safety Act Surface Coating Materials Regulations SOR/2016-193 and Amendment SOR/2022-122 for prohibition on Lead in stickers, films or surface coating materials.

ND = Not detected

Tested Components: See component list in the last section of this report

13 Toxic Elements Analysis (CCPSA SOR/2011-17 and Amendment SOR/2022-122)

With reference to Method C-02.2.1, C-07 published in Health Canada Product safety reference manual Book 5 - Laboratory Policies and Procedures Part B: Test Methods Section, acid digestion method was used and toxic elements content were determined by Inductively Coupled Plasma-mass Spectrometry.

Element	Result		Detection Limit (mg/kg)	Limit (mg/kg)
	Tested component			
	(1)			
Tot. Lead (Pb)	ND		10	90
Tot. Mercury (Hg)	ND		0.047	10



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Number: SZHH01845691

Tests Conducted

With reference to Section 8.3.2 to 8.3.5 of the ASTM Standard Consumer Safety Specification on Toy Safety F963-17, extraction method was used and toxic elements content were determined by Inductively Coupled Argon Plasma Spectrometry.

Element	Result	Detection Limit (mg/kg)	Limit (mg/kg)
	Tested component		
	(1)		
Sol. Cadmium (Cd)	ND	5	1000
Sol. Antimony (Sb)	ND	5	1000
Sol. Selenium (Se)	ND	5	1000
Sol. Arsenic (As)	ND	2.5	1000
Sol. Barium (Ba)	ND	5	1000

The above limit was quoted according to Canada Consumer Product Safety Act Toys Regulations SOR/2011-17 and Amendment SOR/2022-122 Section 23 for prohibition on toxic elements in stickers, films and surface coating materials.

Sol. = Soluble
 ND = Not detected (less than detection limit)

Tested Components: See component list in the last section of this report

14 Total Lead (Pb) content (CCPSA SOR/2018-83)

As per Method C-02.2.2, C-02.3.2, C-02.4.1, published in Health Canada Product safety reference manual Book 5 - Laboratory Policies and Procedures Part B: Test Methods Section, acid digestion was used and Total Lead content was determined by Inductively Coupled Argon Plasma Spectrometry.

Element	Result (mg/kg) θ	Detection Limit (mg/kg)	Limit (mg/kg)
	Tested Component		
	(1) (4)		
Lead (Pb)	ND	10	90

The above limit was quoted according to Canada Consumer Products Containing Lead Regulations SOR/2018-83.

ND = Not detected (less than detection limit)
 θ = Single result for each test component/group

Tested Components: See component list in the last section of this report

15 Total Lead (Pb) Content in Non-Surface Coating (U.S. ASTM F963-17)

With reference to Section 4.3.5 of the ASTM Standard Consumer Safety Specification on Toy Safety F963-17, test method CPSC-CH-E1001-08.3 or/and CPSC-CH-E1002-08.3 were used and total Lead content was determined by Inductively Coupled Argon Plasma Spectrometry and/or Atomic Absorption Spectrometry.



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Number: SZHH01845691

Tests Conducted

Element	Result (ppm)				Reporting Limit (ppm)	Limit (ppm)
	Tested Component					
	(4)					
Lead (Pb)	ND				10	100

ppm = part per million = mg/kg
 ND = Not detected

Tested Components: See component list in the last section of this report

16 Total Lead (Pb) Content in Surface Coating (U.S. ASTM F963-17)

With reference to Section 4.3.5 of the ASTM Standard Consumer Safety Specification on Toy Safety F963-17, test method CPSC-CH-E1003-09.1 was used and total Lead content was determined by Inductively Coupled Argon Plasma Spectrometry.

Element	Result (ppm)				Reporting Limit (ppm)	Limit (ppm)
	Tested Component					
	(1)					
Lead (Pb)	ND				10	90

ppm = part per million = mg/kg
 ND = Not detected

Tested Components: See component list in the last section of this report

17 Heavy Elements Analysis (Except modelling clay) (U.S. ASTM F963-17)

As per Section 4.3.5 and Section 8.3.2 to 8.3.5 of the ASTM Standard Consumer Safety Specification on Toy Safety F963-17, heavy elements migration content were determined by Inductively Coupled Argon Plasma Spectrometry.

Element	Result (ppm)				Reporting limit (ppm)	Limit (ppm)
	Tested component					
	(1)	(2)	(3)	(5)		
Sol. Barium (Ba)	ND	ND	ND	ND	5	1000
Sol. Lead (Pb)	ND	ND	ND	ND	5	90
Sol. Cadmium (Cd)	ND	ND	ND	ND	5	75
Sol. Antimony (Sb)	ND	ND	ND	ND	5	60
Sol. Selenium (Se)	ND	ND	ND	ND	5	500
Sol. Chromium (Cr)	ND	ND	ND	ND	5	60
Sol. Mercury (Hg)	ND	ND	ND	ND	5	60
Sol. Arsenic (As)	ND	ND	ND	ND	2.5	25



Test Report

Number: SZHH01845691

Tests Conducted

Sol. = Soluble
 ppm = part per million = mg/kg
 ND = Not detected

Tested Components: See component list in the last section of this report

18 Soluble Cadmium (Cd) content in Metal (small parts) (U.S. ASTM F963-17)

As per Section 4.3.5.2(2)(c) and 8.3.5.5(3) of the ASTM Standard Consumer Safety Specification on Toy Safety F963-17, test method CPSC-CH-E1004-11 was used and soluble cadmium content was determined by Inductively Coupled Argon Plasma Spectrometry.

Element	Result (µg)		Detection Limit (µg)	Limit (µg)
	Tested Component			
	(5)			
Sol. Cadmium (Cd)	ND		5	200

Sol. = Soluble
 µg = micrograms
 ND = Not detected (less than detection limit)

Tested Components: See component list in the last section of this report

Component list:

- (1) Black coating on metal (surface of frame)
- (2) Black plastic (pad)
- (3) Gunmetal gray plastic (fastener)
- (4) Silver color metal excluding black coating (frame)
- (5) Black treated metal (bolts & washer)

End of report

*The statements of conformity reported have considered the decision rule agreed, namely that Intertek have taken account of measurement uncertainty as calculated by Intertek, and applied according to ILAC-G8/09:2019 (Non-binary acceptance based on guard band **w = U**) except designation from the customer, regulation or test specification. This decision rule only applies to the numeric test results.*

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