





**Test Report** No. VNHL2209020244TY Date: September 23, 2022 Page 1 of 17

### DISCOVERY GLOBAL PARTNERS LLC

NO. 769, NO.15 GROUP, TAN BINH STREET, TAN HIEP DISTRICT, TAN UYEN COUNTY, BINH DUONG PROVINCE, VIETNAM

The following sample(s) was/were submitted and identified by the client as:

SGS Job No. VNHL2209020244TY

80215R-82115R-82815R-83215R-85215R

MISSION FULL/FULL BUNK BED

K/D BOLT TOGETHER FULL/FULL BUNK BED SIDE RAILS, Sample Description

**PLYWOOD** 

K/D BOLT TOGETHER FULL/FULL BUNK BED SIDE RAILS, EDGE

**GLUED PINE** 

Color WHITE, HONEY, MERLOT, CHARCOAL, ASH

Characteristic PINE, ACACIA, PLYWOOD

WATERFALL INDUSTRIES INC., Buyer

DBA DISCOVERY WORLD FURNITURE INC.

Country of Origin **VIETNAM** 

Country of Destination US

As above information is provided and confirmed by the applicant. SGS is not liable to the accuracy, suitability, reliability or/and integrity of the information.

\*\*\*\*\*\*\*\*\*\*\*

Sample Receiving Date **SEPTEMBER 13, 2022** Final Confirmed Date **SEPTEMBER 13, 2022** 

**Testing Period** SEPTEMBER 13, 2022 TO SEPTEMBER 23, 2022 **Test Performed** PLEASE REFER TO THE RESULT SUMMARY.

**Test Results** PLEASE REFER TO NEXT PAGE(S)

**Result Summary** 

SGS Vietnam Ltd.

Test Requested	Conclusion
ASTM F1427 – 21 Standard Consumer Safety Specification for Bunk Beds	Pass / See results
16 CFR 1213 – Safety Standard for Entrapments Hazard In Bunk Bed	Pass / See results
16 CFR 1513 – Requirements for Bunk Beds	Pass / See results
Static Load – Edge	Pass / See results
Distributed Load Capacity	Pass / See results

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Signed for and on behalf of SGS Vietnam LTD

Thay mặt công ty

SGS SGS Vietnam Lta

**Nguyen Thi Huong** Hardline Lab Manager

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**Test Result:** 

#### **Sample Description:**

No.	Component	Material	Color
1	80215R-82115R-82815R-83215R-85215R MISSION FULL/FULL BUNK BED K/D BOLT TOGETHER FULL/FULL BUNK BED SIDE RAILS, PLYWOOD K/D BOLT TOGETHER FULL/FULL BUNK BED SIDE RAILS, EDGE GLUED PINE	1 FINISHED PRODUCT/ PINEWOOD/ PLYWOOD	AS RECEIVED
2	80215R-82115R-82815R-83215R-85215R MISSION FULL/FULL BUNK BED K/D BOLT TOGETHER FULL/FULL BUNK BED SIDE RAILS, PLYWOOD K/D BOLT TOGETHER FULL/FULL BUNK BED SIDE RAILS, EDGE GLUED PINE - SIDE RAIL	PINEWOOD	AS RECEIVED
3	80215R-82115R-82815R-83215R-85215R MISSION FULL/FULL BUNK BED K/D BOLT TOGETHER FULL/FULL BUNK BED SIDE RAILS, PLYWOOD K/D BOLT TOGETHER FULL/FULL BUNK BED SIDE RAILS, EDGE GLUED PINE – SIDE RAIL	PLYWOOD	AS RECEIVED

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#### ASTM 1427 - 21 Standard Consumer Safety Specification for Bunk Beds

Test Item		Test Method and Requirement	Result
	4.1.1	All vertical protrusions along the top inside (Fig. 3) 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. (5 mm) above the upper edge of the adjacent surface. Ladder stiles (uprights) shall not extend more than 3/16 in. (5 mm) above the upper edge of the adjacent surface.	PASS
Vertical Protrusions Clause 4.1	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. (5 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. (5 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.	NA
Fit of Top Bed to Bottom Bed Clause 4.2	4.2	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 11/4 in. (32 mm), or a fastening mechanism may be used that will prevent the disengagement of the top bed from the bottom bed.	PASS
Mattress and Foundation Size and Fit (Top Bed) Clause 4.3	4.3	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 test wedge block when tested in accordance with 5.2.	PASS
Mattress Size and Fit (Lower Foundation) Clause 4.4	4.4	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. (230 mm), when tested in accordance with 5.3.	PASS
Upper and Lower Foundation Support Systems Clause 4.5	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.	PASS
	4.5.2	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	PASS

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### ASTM 1427 - 21 Standard Consumer Safety Specification for Bunk Beds

Test Item		Test Method and Requirement	Result
I COL ILCIII		· ·	1
		passage of both the wedge block and the 9-in. (230-mm) diameter rigid sphere when tested in accordance with 5.9.	
	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.	PASS
	4.5.4	The foundation support system shall not fail when tested in accordance with 5.4.	PASS
Side Rails	4.6.1	Bolt-On Side Rails, 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-mm) diameter or ISO/ANSI size M6. For wood beds, these bolts shall be spaced a minimum of 11/2 in. (38 mm) apart on their centers. When the bolts are fully tightened in the assembled bed, no more than 1/4 in. (6 mm) of thread shall be exposed.	PASS
Clause 4.6	4.6.2	Hook-on Side Rails, 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 Th	Side Rail Attachments There shall be no structural failure of bed side rail fastening systems when tested in accordance with 5.5.	PASS
Guardrails Clause 4.7	4.7.1	Two guardrails shall accompany any bed in which the underside of the foundation is over 30 in. (767 mm) from the floor. Guardrails may be separate from or integral with the ladder.	PASS
	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.	PASS
	4.7.3	The upper edge of the guardrails shall be at least 5 in. (130 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.	PASS
	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.	PASS
	4.7.5	A guardrail may terminate before reaching the bed end structure, providing there is no more than 15 in. (380 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	PASS

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#### ASTM 1427 - 21 Standard Consumer Safety Specification for Bunk Beds

Test Item		Test Method and Requirement	Result
		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.	1
	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. (130 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.	PASS
	4.8.2	There shall be no opening in the rigid end structures of the upper bunk/bunks that permit 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.	PASS
Bed Structure Clause 4.8	4.8.3	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. (230-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.	PASS
	4.8.4	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. (230 mm) diameter rigid sphere also must conform to the neck entrapment requirement.	PASS
Ladders Clause 4.9	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.	PASS
	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. (230 mm) diameter rigid sphere. The width of the ladder shall be no less than 10 in. (250 mm) measured from the inside of the stiles. Vertical spacing of ladder steps shall be no greater than 12 in. (300 mm) when measured from the floor to the first step or between steps. When	PASS

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### ASTM 1427 - 21 Standard Consumer Safety Specification for Bunk Beds

Test Item		Test Method and Requirement	Result
rest item		rest method and nequirement	1
		bed structures are used as ladders, vertical spacing may be up to 16 in. (400 mm).	
	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 shown in Fig. 5, unless they are large enough to permit the free passage of the 9 in. (230 mm) diameter rigid sphere.	PASS
	4.9.4	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 manufacturer's recommended mattress and the interior vertical stile between 1.88 in. (48 mm) and 9 in. (230 mm) when tested in accordance with 5.3.	PASS
Metal Beds: Frame and Fastenings Clause 4.10		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.	NA
Marking and Labeling Clause 6		There shall be a permanent label or marking on each bunk bed set to enable a consumer to identify the name, city, state, and zip code of the manufacturer, distributor, or seller and the month, model number, and year of manufacture.	PASS
Instructional Literature Clause 7		Printed instructions shall accompany each bunk bed set.	PASS

Note: NA = Not Applicable

Remark This / these test(s) was / were performed by SGS Vietnam's Hardline lab.

This / these test(s) was / were accredited ISO 17025:2017 by VILAS

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#### 16 CFR 1213 SAFETY STANDARD FOR ENTRAPMENTS HAZARD IN BUNK BED

Test Item	Test method and Requirement	Result
	-	1
1213.3 Requir 1213.3(a) Gua		
1213.3(a) Gua	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.	PASS
	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 (5.6mm) (so as to not cause a finger entrapment hazard for a child).	PASS
	The other guardrail may terminate before reaching the bed's end structures, providing there is no more than 15 inches (380mm) between either end of the guardrail and the nearest bed end structures.	PASS
	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.	PASS
	Guardrails shall be attached so that they cannot be removed without either intentionally releasing a fastening device or applying forces sequentially in different directions.	PASS
	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.	PASS
	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 of this part when tested in accordance with the procedure at §1213.4(a).	PASS
1213.3(b) Bed	end structures:	
	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.	PASS
	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 when tested in accordance with the procedure at § 1213.4(b).	PASS
	When tested in accordance with § 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, unless the openings are also large enough to permit the free passage of a 9 inch (230 mm) diameter rigid sphere.	PASS

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### 16 CFR 1213 SAFETY STANDARD FOR ENTRAPMENTS HAZARD IN BUNK BED

T	To at mostly and Doming mount	Result
Test Item	Test method and Requirement	1
	All portions of the boundary of any opening required by §§ 1213.4(c)(1) and (2) to be probed by the wedge block, and that permits free passage of a 9-inch diameter sphere, must conform to the neck entrapment requirements of § 1213.4(c)(3).	PASS
1213.5 Marking		
1213.5(a)	There shall be a permanent label or marking on each bed stating the name and address (city, state, and zip code) of the manufacturer, distributor, or retailer; the model number; and the month and year of manufacture.	PASS
1213.5(b)	The following warning label shall be permanently attached to the inside of an upper bunk bed end structure in a location that cannot be covered by the bedding but that may be covered by the placement of a pillow.	
	△ WARNING	
	To help prevent serious or fatal injuries from entrapment or falls:	
	Never allow a child under 6 years on upper bunk	PASS
	Use only a mattress that is inches long and inches wide on upper bunk	1700
	Ensure thickness of mattress and foundation combined does not exceed inches and that mattress surface is at least 5 inches below upper edge of guardrails	
	DO NOT REMOVE THIS LABEL	
1213.6	Instructions. Instructions shall accompany each bunk bed set and shall include the following information.	PASS
1213.6(a)	Size of mattress and foundation.  The length and width of the intended mattress and foundation shall be clearly stated, either numerically or in conventional terms such as twin size, twin extra-long, etc. In addition, the maximum thickness of the mattress and foundation required for compliance with § 1213.3(a)(5) and (b)(1) shall be stated.	PASS
1213.6(b)	Safety warnings The instructions shall provide the following safety warnings:	PASS
	Do not allow children under 6 years of age to use the upper bunk.	PASS
	Use guardrails on both sides of the upper bunk.	PASS
	Prohibit horseplay on or under beds.	PASS
	Prohibit more than one person on upper bunk.	PASS
	Use ladder for entering or leaving upper bunk.	PASS
	If the bunk bed will be placed next to a wall, the guardrail that runs the full length of the bed should be placed against the wall to prevent entrapment between the bed and the wall.  This applies only to bunk beds without two full-length guardrails.	PASS

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#### 16 CFR 1513 – REQUIREMENTS FOR BUNK BEDS

Test Item	Test method and Requirement	Result
1513.3 Require	-	1
1513.3 nequii 1513.3(a) Guai		
, ,	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.	PASS
	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 (5.6mm) (so as to not cause a finger entrapment hazard for a child).	PASS
	The other guardrail may terminate before reaching the bed's end structures, providing there is no more than 15 inches (380mm) between either end of the guardrail and the nearest bed end structures.	PASS
	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.	PASS
	Guardrails shall be attached so that they cannot be removed without either intentionally releasing a fastening device or applying forces sequentially in different directions.	PASS
	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.	PASS
	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.	,,,,,,
	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 of this part when tested in accordance with the procedure at §1513.4(a).	PASS
1513.3(b) Bed	end structures	
	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.	PASS
	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 when tested in accordance with the procedure at § 1513.4(b).	PASS

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### 16 CFR 1513 - REQUIREMENTS FOR BUNK BEDS

Test Item	Test method and Requirement	Result		
	When tested in accordance with § 1513.4(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, unless the openings are also large enough to permit the free passage of a 9 inch (230 mm) diameter rigid sphere.	PASS		
	All portions of the boundary of any opening required by §§ 1513.4(c)(1) and (2) to be probed by the wedge block, and that permits free passage of a 9-inch diameter sphere, must conform to the neck entrapment requirements of § 1513.4(c)(3).	PASS		
1513.5 Marking	g and labeling			
1513.5(a)	There shall be a permanent label or marking on each bed stating the name and address (city, state, and zip code) of the manufacturer, distributor, or retailer; the model number; and the month and year of manufacture.	PASS		
1513.5(b)	The following warning label shall be permanently attached to the inside of an upper bunk bed end structure in a location that cannot be covered by the bedding but that may be covered by the placement of a pillow.			
	<sup>△</sup> WARNING			
	To help prevent serious or fatal injuries from entrapment or falls:			
	Never allow a child under 6 years on upper bunk	PASS		
	Use only a mattress that is inches long and inches wide on upper bunk			
	Ensure thickness of mattress and foundation combined does not exceed inches and that mattress surface is at least 5 inches below upper edge of guardrails			
	DO NOT REMOVE THIS LABEL			
1513.6	Instructions. Instructions shall accompany each bunk bed set, and shall include the following information.	PASS		
1513.6(a)	Size of mattress and foundation.			
	The length and width of the intended mattress and foundation shall be clearly stated, either numerically or in conventional terms such as twin size, twin extra-long, etc. In addition, the maximum thickness of the mattress and foundation required for compliance with § 1513.3(a)(5) and (b)(1) shall be stated.	PASS		

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## **Test Report**

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#### 16 CFR 1513 – REQUIREMENTS FOR BUNK BEDS

Test Item	Took mostly of and Domisirement	Result	
restitem	Test method and Requirement	1	
1513.6(b)	Safety warnings The instructions shall provide the following safety warnings:	PASS	
	Do not allow children under 6 years of age to use the upper bunk.	PASS	
	Use guardrails on both sides of the upper bunk.	PASS	
	Prohibit horseplay on or under beds.	PASS	
	Prohibit more than one person on upper bunk.	PASS	
	Use ladder for entering or leaving upper bunk.	PASS	
	If the bunk bed will be placed next to a wall, the guardrail that runs the full length of the bed should be placed against the wall to prevent entrapment between the bed and the wall.	PASS	
	This applies only to bunk beds without two full-length guardrails.		

Note: NA = Not Applicable

Remark This / these test(s) was / were performed by SGS Vietnam's Hardline lab.

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#### Static Load - Edge and Distributed Load Capacity

Toot Itom	n Test Method Requirement		Result
Test Item			2
Static Load – Edge Test	In-house method (As Client's Request)	No structure failure when 300 lbs test load is placed on 16" diameter disc 1 inches from edge. Load stays for 30 minutes.	PASS
Distributed Load Capacity	In-house method (As Client's Request)	Apply the load gradually on top of slats. The load stays for 24 hours.	PASS Load: 700lbs
		Load specification per type of Bed: - Single: 500lbs - Full: 700lbs - Queen/King: 800lbs	

Test Item	Test Method	Requirement	Result
			3
Static Load – Edge Test	In-house method (As Client's Request)	No structure failure when 300 lbs test load is placed on 16" diameter disc 1 inches from edge. Load stays for 30 minutes.	PASS
Distributed Load Capacity	In-house method (As Client's Request)	Apply the load gradually on top of slats. The load stays for 24 hours.	PASS Load: 700lbs
		Load specification per type of Bed: - Single: 500lbs - Full: 700lbs - Queen/King: 800lbs	

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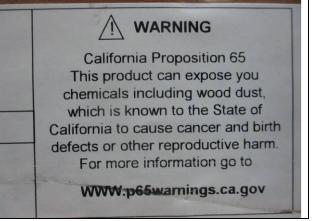
#### PHOTO OF SUBMITTED SAMPLE FOR TESTING

#### PINEWOOD PRODUCT









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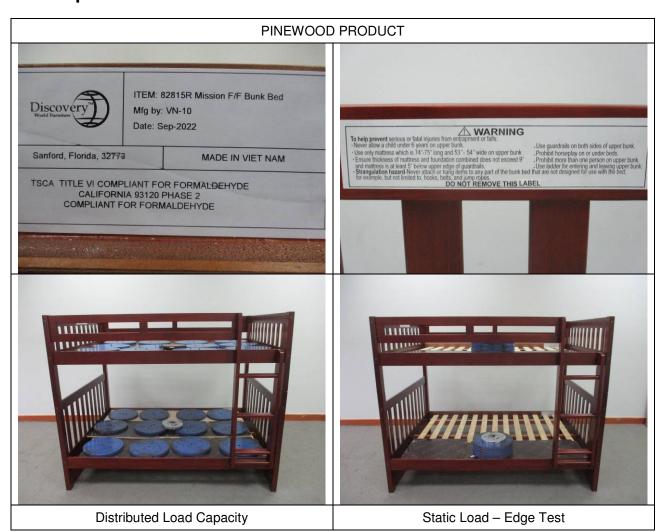
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### PLYWOOD PRODUCT









Distributed Load Capacity



Static Load - Edge Test

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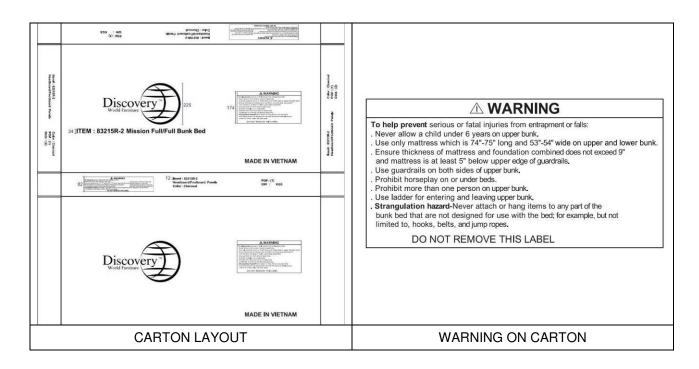




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