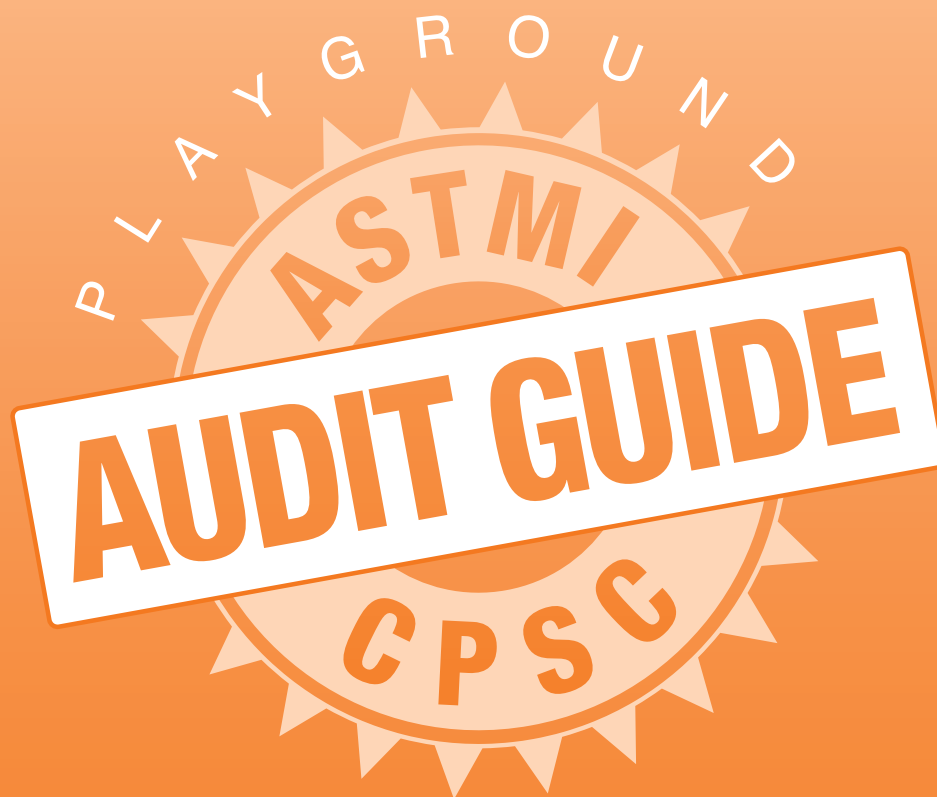


Your Guide To Assessing ASTM/CPSC Compliance



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## INTRODUCTION

**I**n 1981 the U.S. Consumer Product Safety Commission (CPSC) published its **Handbook for Public Playground Safety**. This was a set of guidelines designed to reduce the number and severity of accidents on public use playgrounds. The Handbook was promulgated in response to the growing number of serious accidents which were reported on playgrounds and play equipment from hospital emergency rooms throughout this country. The 1981 guidelines were directed towards play areas for children ages 5-12 years.

In November, 1991 the CPSC issued a revised **Handbook for Public Playground Safety**, with many changes from the previous version. The new version addressed equipment for children from the age of two years to twelve years and, based on current injury data, identified some new areas of concern. This handbook has had 2 revisions since 1991.

ASTMI (American Society for Testing and Materials International) is one of the largest voluntary standard-setting organizations in the world. In 1988 ASTMI undertook a project to develop safety standards for Public Use Playground Equipment. A committee of over 140 professionals and consumers, dedicated to playground safety, worked on the development of this standard and, in December, 1993, ASTMI Published F1487, Standard Consumer Safety Performance Specification for Playground Equipment for Public Use, which as since had 3 revisions.

This audit publication measures existing playground equipment against the latest ASTM F1487 and the CPSC Guidelines. Although the ASTM standard is “voluntary,” it was developed with the cooperation of the CPSC, and communities seeking to upgrade their playgrounds should use both documents as resource points. That is the intent of this publication.

It should be noted that there is a major difference between an audit and an inspection of the playground. The audit identifies the pieces that are on the playground, their current condition, and how they measure up to the ASTM specification F1487. In addition, the surfacing and design of the play area are evaluated. The audit forms the basis for the development of a master plan to upgrade the safety of the play area and in addition to identifying the current conditions, it prioritizes the changes that have to be made to remove, repair, replace. Using the completed audits, a community can establish both the plan and budget for playground upgrading. This is especially important since few communities can afford to make all the identified changes at one time, and need to establish a plan to have their playgrounds meet the ASTM F1487 requirements.

After the audit is completed and playgrounds upgraded, regularly scheduled inspections should be held, to make certain that the playground remains in good condition. Of course, constant inspections are crucial so that regular maintenance procedures can repair and replace worn and deteriorating parts of equipment.

The audit allows the user to both judge the playground against the ASTM standard F1487 and the CPSC Handbook, and also to prioritize actions needed for upgrading. It uses a priority system based upon one which appeared in the National Park Service publication **Trends**. The three levels of priority, as identified in this article, are:

- 1. Any condition which is life-threatening or can cause severe, permanent disability.**
- 2. Any condition which can cause serious or non-disabling injury.**
- 3. A condition which may cause slight injury; \*a condition which may not have caused injury but does not meet the requirements in ASTM F1487 Standard Consumer Safety Performance Specifications for Playground Equipment for Public Use, and the CPSC Handbook for Public Playground Safety.**

*\* This last statement has been added by the auditors to the priority ratings identified in **Trends**.*

In addressing these priorities it is obvious that priority (1) items must be addressed immediately, followed by the second and third priorities. Together they form the master plan for upgrading your playground.

An audit sheet should be filled out for every piece of play equipment and every playground you operate. These reports should be kept on file for the life of the equipment and play area.



This Audit Guide is being provided as a public service by;

If you have any questions on the audit procedure contact your local Playworld Systems representative, or call 1-800-233-8404.



# QUICK REFERENCE GUIDE

ASTMI SPECIFICATION F1487 AND  
CPSC HANDBOOK FOR PUBLIC PLAYGROUND SAFETY

## SURFACING REQUIREMENTS

Methods Used to Determine Shock Absorbency	200g maximum and 1000 HIC maximum
Fall Height (Definition)	The vertical distance between a designated play surface and the protective surfacing beneath it.
Critical Fall Height	The maximum height which yields no more than 200g's and 100 HFC when impacted in a fall.
Fall Height Measurement	<ul style="list-style-type: none"><li>• Swing – height of pivot point</li><li>• Elevated Platforms – height of the platform</li><li>• Upper Body Equipment – maximum height of structure</li><li>• Climbers – Free-Standing – highest part of the climbing component</li><li>• Climbers – Access/Egress – highest part of the climber intended for foot support</li><li>• Merry-Go-Rounds – height of any part of perimeter on which child may sit or stand</li><li>• See-Saws – maximum height attainable by any part of the see-saw</li><li>• Spring Rockers – maximum height above the ground by seat or designated play surface</li><li>• Balance Beams – highest part of the walking surface</li><li>• Sliding Poles – platform when accessed from platform</li><li>• Sliding Poles without Platform – 60" below highest portion of pole</li><li>• Log Rolls – the highest point of the rolling part</li><li>• Roofs – have no fall height requirements</li></ul>
Use Zones (Definition)	Use Zone – where protective surfacing is required. The area beneath and immediately adjacent to a play structure or equipment that is designated for unrestricted circulation around the equipment and on whose surface it is predicted that a user would land when falling from or exiting the playground.
USE ZONES: Stationary Equipment	Should extend a minimum of 6 feet from perimeter. May overlap if designated play surfaces are no more than 30 inches above the protective surfacing (See ASTMI for additional information).
Slides	No less than 6 feet from slide exit end; maximum 8 feet (ASTMI). No overlap. 6 feet around all other sides.
Single Axis Swings	Two times height of pivot point to surface front and back and 6 feet at either end. Ends may overlap.
Multi-Axis Swings	Six feet from pivot point plus length of suspending member, 6 feet at the ends. Ends may overlap.
Tot Swings	Two times height of pivot point to occupant's sitting surface, front and back, 6 feet at either end. Ends may overlap.
Merry-Go-Rounds	Six feet from perimeter. No overlap allowed.

Spring Rocking Equipment	<p>Six feet from at-rest perimeter if intended for sitting. May overlap if seat is no higher than 30 inches.</p> <p>Seven feet from at-rest perimeter if intended for standing. Sides may not overlap.</p>
Composite Equipment	Use zone for individual components in one design. Use professional judgement. Single and multi-axis swings.
Equipment That Requires No Use Zone	The use zone for stationary play equipment shall extend no less than 72 in. (1830 mm) from all sides of the play structure. Equipment that is intended for a user to maintain contact with the ground during play has no individual use zone requirements (for example, free standing talk tubes, free standing activity panels, ground level sandboxes).

## GENERAL HAZARDS

	ASTM I	CPSC
Sharp Points, Corners, Edges	Should be none.	Should be none.
	Exposed open ends of all tubing not resting on the ground or otherwise covered shall have caps or plugs that cannot be removed without tools.	Exposed open ends of all tubing not resting on the ground or otherwise covered shall have caps or plugs that cannot be removed without tools.
Wood Parts, Corners	Smooth, free of splinters.	Smooth, free of splinters.
	All corners rounded.	All corners rounded.
Protrusions	A projection that fails the protrusion test.	Hardware should not be capable of entangling children's clothing or lacerating. (Use protrusion gauges).
Suspended Members	No surface should protrude beyond test gauge.	No surface should protrude beyond test gauge.
Head Entrapment (Completely Bound Opening)	For all completely bound openings, if the small torso probe can be inserted into the opening to a depth greater than 4 inches, then the large head probe must also pass through the opening, or you have head entrapment. (Area to be tested-use probes)	For all completely bound openings, if the small torso probe can be inserted into the opening to a depth greater than 4 inches, then the large head probe must also pass through the opening, or you have head entrapment. (Area to be tested-use probes)
Angles	Test for partially bounded openings.	Angle of vertex not less than 55 degrees, unless lower leg is horizontal or projects downward.
	Rigid shield can cover angle less than 55 degrees.	Rigid shield can cover angle less than 55 degrees.
Tripping Hazards	Not addressed.	All anchoring devices installed <b>below</b> playing surface.
	Not addressed.	No concrete footings exposed.
	Not addressed.	No environmental obstacles including rocks, roots, other ground protrusions.

	ASTMI	CPSC
Tripping Hazards (cont.)	Not addressed	Retaining walls highly visible, change of elevation.
	Support posts for balance beams shall not pose a tripping hazard.	Not addressed.
Crush and Shear Points	Should be none.  Finger Probe test added.	Should be none.
Materials	Use only materials with demonstrated durability.  New materials shall be tested or documented by manufacturer.  Ferrous Metals painted or galvanized. Plastics and other materials shall be protected against ultraviolet light.  Meet CPSC regulation for lead paint.  Wood naturally rot-resistant or treated after fabrication.  Creosote, pentachlorophenol and tributyl tin oxide not acceptable.	Use only materials with demonstrated durability.  New materials shall be tested or documented by manufacturer.  Ferrous Metals painted or galvanized.  Meet CPSC regulation for lead paint.  Wood naturally rot-resistant or treated after fabrication.  Creosote, pentachlorophenol and tributyl tin oxide not acceptable.
Hardware	Should not be removable without use of tools.  Fasteners corrosion resistant.  Bearings or bearing surfaces that reduce friction or wear.  S-hooks closed tightly as possible. (.04 measured with a feeler gauge.)	Should not be removable without use of tools.  Fasteners corrosion resistant.  Bearings easy to lubricate or self-lubricating.  S-hooks are considered closed if no gap or space more than .04" exists. (This is about the thickness of a dime.)
Metal Surfaces	Not addressed.	Bare metal platforms and slide beds located out of direct sun rays.
Stability	When properly installed, equipment withstands forces for overturn, tip, slide or move in any way. Alternative to testing is professional certification.	
Maintenance	Comprehensive maintenance program.	Comprehensive maintenance program.
Installation	Follow manufacturer's instructions.  Do not deviate from manufacturer's instructions.  Not addressed.  Not addressed.	Follow manufacturer's instructions.  Do not deviate from manufacturer's instructions.  Inspect before first use.  Keep all instructions on file.



	ASTMI	CPSC
Installation (cont.)	<p>Durable label to identify manufacturer.</p> <p>Label of warning on surfaces.</p>	<p>Durable label to identify manufacturer.</p> <p>Not addressed.</p>
Maximum Heights	<p>Height restriction on horizontal ladders and balance beams.</p>	<p>Height restriction on horizontal ladders, balance beams and tot swings.</p>
General Cables, Wires, Ropes	<p>None should be suspended between play units within 45 degrees of horizontal (if greater than 7 feet are exempt) doesn't apply to flexible climber – use bright colors for ropes &amp; cables.</p>	<p>None should be suspended between play units within 45 degrees of horizontal (if greater than 7 feet are exempt) doesn't apply to flexible climber – use bright colors for ropes &amp; cables.</p>
Age Separation	<p>Play equipment for a specific age group shall have all play activities meet requirements for that age group.</p>	<p>Separate areas should be provided for younger children with appropriately sized equipment (pre-schoolers require more supervision).</p>

## LABELING

Shall Read	<p>All play structures and composites must carry a durable warning label and separate manufacturer's identification. Label shall not be able to be removed without a tool.</p> <p>Either a sign or label shall be provided stating the age group the playground is for along with "adult supervision is recommended."</p>	<p>Signs and/or labels should give adults guidance on age appropriateness of equipment (CPSC Guidelines).</p>
Warning	<p>Installation over a hard surface such as concrete, asphalt or packed earth may result in serious injuries or death from falls.</p> <p>Triangle with exclamation point inside shall precede "Warning."</p>	<p>Not addressed.</p> <p>Not addressed.</p>

## Important to Note

### Definitions

**Designated Play Surface** – any elevated surface for standing, walking, sitting or climbing, or a flat surface larger than 2" wide by 2" long having less than a 30 degree angle from horizontal.

**Professional Judgement** – The ability of an individual with current knowledge, skill or experience, or both, in the field of playground/playground equipment design, use, or operations, which enables the person to form an opinion or make a decision, or both, concerning a matter within that field of expertise.

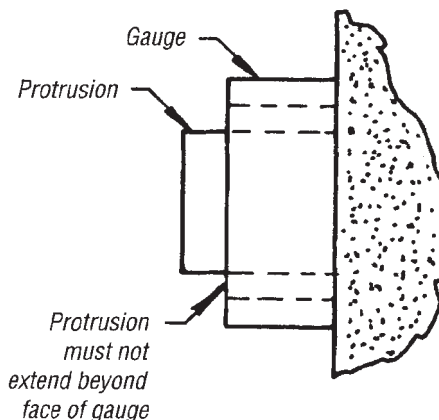
# PLAYGROUND SAFETY AUDIT TESTING PROCEDURES

## Projection Test Procedures

Successively place each gauge over any projection and determine if it projects beyond the faces of the gauge (see figure).

### Projection Test Procedure for Suspended Members of Swing Assemblies

Conduct the test with the suspended member in its rest position. Place the gauge (2 inches o.d. x 1-1/4 inches i.d. x 1/8 inch thick) over any projection on the front or rear surface of the suspended member such that the axis of the hole in the gauge is parallel to both the intended path of the suspended member and a horizontal plane. Visually determine if the projection penetrates through the hole and beyond the face of the gauge.



### Entrapment Test Procedure for Completely Bounded Openings

Attempt to place the Small Torso Probe in the opening with the plane of the probe parallel to the plane of the opening. While keeping it parallel to the plane of the opening, the probe should be rotated to its most adverse orientation i.e. major axis of the template oriented parallel to the major axis of the opening. If the Small Torso Probe can be freely inserted through the opening, place the Large Head Probe in the opening, again with the plane of the probe parallel to the plane of the opening, and attempt to freely insert it through the opening.

An opening can pass this test when tested in accordance with the above test procedures in one of two ways.

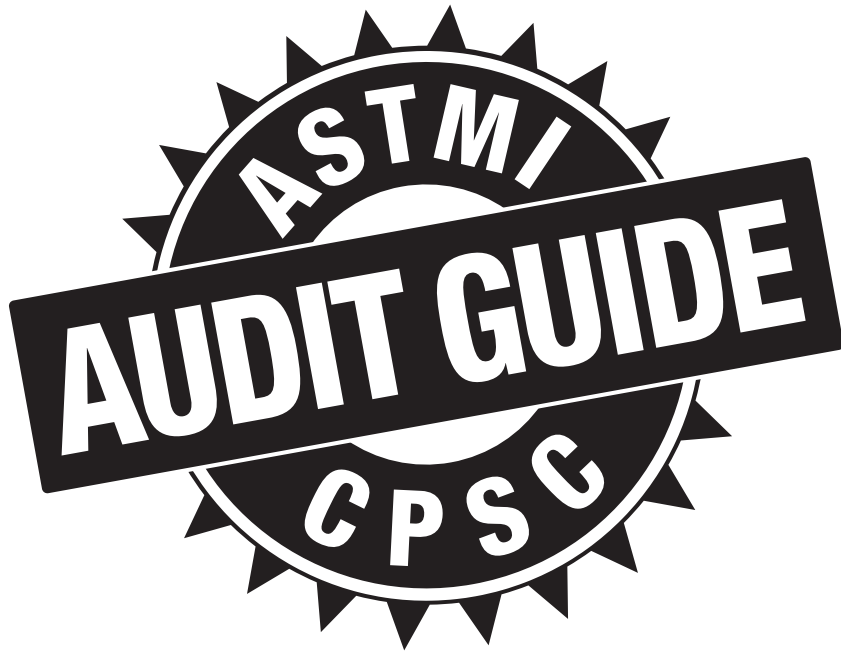
1. The opening does not admit the Small Torso Probe when it is rotated to any orientation about its own axis, or
2. The opening admits the Small Torso Probe and also admits the Large Head Probe. An opening fails the test under the following conditions: the opening admits the Small Torso Probe but does not admit the Large Head Probe.

### Entrapment Test Procedure for Non-Rigid Openings

Place the Small Torso Probe in the opening, tapered end first, with the plan of the probe parallel to the plane of the opening. While keeping its base parallel to the plane of the opening, rotate the probe to its most adverse orientation (major axis of probe parallel to major axis of opening). Determine whether the probe can be pushed or pulled through the opening by a force no greater than 50 lbs. If the Small Torso Probe cannot pass completely through the opening, it conforms to the requirements.

If the Small Torso Probe passes completely through the opening, place the Large Head Probe in the opening with the plane of its base parallel to the plane of the opening. Again attempt to push or pull the probe through the opening with a force no greater than 50 lbs. If the Large Head Probe can pass completely through the opening, it conforms to the requirements.

Test for Partially Bounded Openings – See ASTM Standard F1487.



## FORMS

*Please feel free to reproduce the following sample  
Audit Forms for your own personal use  
in determining the safety of your playground.*



## GENERAL HAZARDS

Playground: \_\_\_\_\_ Materials: \_\_\_\_\_  
 Location: \_\_\_\_\_ Surface: \_\_\_\_\_  
 Inspected By: \_\_\_\_\_ Ages of Intended Users: \_\_\_\_\_  
 Location of Piece: \_\_\_\_\_ Weather: \_\_\_\_\_  
 Height: \_\_\_\_\_ Date of Audit: \_\_\_\_\_

**PRIORITY**

1. Life threatening, permanent disability
2. Serious or non-disabling injury
3. Slight injury or may not have caused injury but does not meet ASTM F1487 or CPSC Handbook for Public Playground Safety

	CONDITION	PRIORITY	RECOMMENDATIONS
<p>Sharp Points, Corners and Edges</p> <ul style="list-style-type: none"> <li>No sharp points, corners or edges on any component of playground equipment.</li> <li>Wood parts to be smooth and no splinters.</li> <li>All corners, metal and wood, should be rounded. Minimum curvature of 1/4 inch for corners and edges of suspended assemblies.</li> <li>Exit end and sides along a slide bed should have special attention.</li> <li>Exposed open ends of all tubing shall have caps or plugs that cannot be removed without tools.</li> </ul>			
<p>Projections</p> <ul style="list-style-type: none"> <li>No projection allowed that is capable of entangling children's clothing or causing lacerations.</li> <li>Special attention required at the top of slides to minimize clothing entanglement.</li> <li>All projections are to be tested in accordance with test procedures. No projection should extend beyond the face of the gauge.</li> <li>Inaccessible projections exempted.</li> <li>Exposed bolt ends should not protrude more than two threads beyond face of the nut, must be free of burrs and sharp edges.</li> <li>No projection shall increase in size or diameter from initial surface to outer end even though it fits within gauges.</li> <li>A projection that extends upward from a horizontal plane is an entanglement hazard.</li> </ul>			
<p>Crush and Shearing Points</p> <ul style="list-style-type: none"> <li>There are no accessible crush or shearing points on playground equipment.</li> <li>To determine if there is a possible crush or shear point, consider the likelihood of entrapping a body part.</li> <li>Must not entrap a 5/8 inch diameter rod. Opening less than 1 inch acceptable if probe cannot touch any crush or shear point.</li> <li>Exemptions: Chain and its method of attachment; attachment area of coil springs to body and base of rocking equipment.</li> </ul>			
<p>Tripping Hazards</p> <ul style="list-style-type: none"> <li>All anchoring devices such as footings and horizontal bars at the bottom of flexible climbers, to be installed below playing surface.</li> <li>Special attention to be given to environmental obstacles such as rocks, roots and other projections from the ground.</li> <li>Support posts for balance beams shall not pose a tripping hazard.</li> <li>Retaining walls should be highly visible; change of elevation should be obvious. Bright colors add to visibility.</li> </ul>			



	CONDITION	PRIORITY	RECOMMENDATIONS
<p>Head and Torso Entrapment</p> <ul style="list-style-type: none"> <li>• A component or group of components should not form openings that could trap a child's head or torso.</li> <li>• For all completely bound openings, if the small torso probe can be inserted into the opening to a depth greater than 4 inches, then the large head probe must also pass through the opening, or you have head entrapment. (area to be tested-use probes)</li> <li>• The above opening requirement applies to all openings if it penetrates 4 inches regardless of their height above the ground, except where the ground serves as the opening's lower boundary.</li> <li>• Non-rigid openings considered accessible if torso probe penetrates to a depth of 4 inches with a force of 50 lbs.</li> </ul>			
<p>Angles</p> <ul style="list-style-type: none"> <li>• The angle of a vertex formed by adjacent components is not to be less than 55 degrees, unless the lower leg is horizontal or projects downwards.</li> <li>• Exception can be made if a rigid shield is attached to the vertex between adjacent components and the shield is sized to prevent a 9 inch diameter probe from simultaneously touching components on either side of the vertex.</li> <li>• Accessible completely bounded openings shall meet requirements for angles.</li> <li>• Use ASTM1 test for partially bounded openings.</li> </ul>			
<p>Suspended Hazards</p> <ul style="list-style-type: none"> <li>• Cables, wires, ropes or similar flexible components suspended between play units or from the ground to a play unit within 45 degrees of horizontal to be located outside of high traffic areas.</li> <li>• Suspended members to be brightly colored or contrast with surrounding equipment.</li> <li>• Suspended members located 7 feet or more above the playground surface are exempt.</li> <li>• Non-rigid components must be a minimum of 1 inch at the widest cross-section dimensions.</li> <li>• Rope, cable or chain shall be fixed at both ends unless 7 inches or less in length.</li> <li>• Elements cannot be looped on itself creating inside perimeter greater than 5 inches.</li> <li>• Exemptions: Multiple suspended components at two or more locations can be located below 7 feet when they comply with all other requirements and cannot be looped or stretched to contact another suspended element.</li> </ul>			

Comments

Action Taken:

Date: \_\_\_\_\_

By: \_\_\_\_\_

Supervisor: \_\_\_\_\_



## STAIRWAYS AND LADDERS

Playground: \_\_\_\_\_ Materials: \_\_\_\_\_  
 Location: \_\_\_\_\_ Surface: \_\_\_\_\_  
 Inspected By: \_\_\_\_\_ Ages of Intended Users: \_\_\_\_\_  
 Location of Piece: \_\_\_\_\_ Weather: \_\_\_\_\_  
 Height: \_\_\_\_\_ Date of Audit: \_\_\_\_\_

**PRIORITY**

1. Life threatening, permanent disability
2. Serious or non-disabling injury
3. Slight injury or may not have caused injury but does not meet ASTM F1487 or CPSC Handbook for Public Playground Safety

**Stairways and Ladders**

- Rung Ladder       Stairway       Other \_\_\_\_\_  
 Step Ladder       Ramps (Not for Disabled) \_\_\_\_\_

	CONDITION	PRIORITY	RECOMMENDATIONS
<b>Stability</b> • Footings are stable and buried below ground level or covered by protective surfacing.			
<b>Corrosion</b> • No corrosion or visible rotting.			
<b>Design</b> • Steps or rungs to be evenly spaced, including the space between the step or rung and the surface of the platform. • Openings between steps or rungs and the underside of the platform should not present an entrapment hazard. • When risers are closed, treads of stairways and step ladders are to prevent the accumulation of water and debris. • Access for rung ladders, flexible climbing devices, arch climbers, and stepping surface for final access shall not be above designated play surface it serves.			
<b>Rungs and Handgripping Components</b> • Rungs to be diameter between .95 and 1.55 inches.			
<b>Handrails</b> • Handrails on stairways and stepladders with more than one tread to be continuous; extending the full length of the access and provided on both sides. • Handrails required regardless of the height of the access.			



	CONDITION	PRIORITY	RECOMMENDATIONS
<p>Slope Requirements</p> <ul style="list-style-type: none"> <li>• <b>Rung Ladder:</b> Slope (75-90 degrees) <i>See attached ladder chart for tread width, tread depth and vertical rise.</i></li> <li>• <b>Step Ladder:</b> Slope (50-75 degrees) <i>See attached ladder chart for tread width, tread depth and vertical rise.</i></li> <li>• <b>Stairway:</b> Slope (less than 50 degrees) <i>See attached ladder chart for tread width, tread depth and vertical rise.</i></li> </ul>			
<p>Handrail Height</p> <ul style="list-style-type: none"> <li>• The vertical distance between the top front edge of a step and the top surface of the handrail should be no less than 22 inches and no more than 38 inches.</li> <li>• Handrail diameter should be between .95 and 1.55 inches.</li> <li>• Any transition from an access to a platform must have handrails or hand holds.</li> </ul>			
<p>Sharp Points, Corners and Edges</p> <ul style="list-style-type: none"> <li>• There are no sharp points, corners or edges. Wood to be smooth and no splinters.</li> </ul>			
<p>Protrusions</p> <ul style="list-style-type: none"> <li>• There are no protrusions. Projections to be tested.</li> </ul>			
<p>Entrapment Angles</p> <ul style="list-style-type: none"> <li>• All angles to be greater than 55 degrees, unless lower leg is horizontal or projects downwards. (Use ASTM I test for Partial Boundaries.)</li> </ul>			
<p>Entrapment – Head and Body</p> <ul style="list-style-type: none"> <li>• For all completely bound openings, if the small torso probe can be inserted into the opening to a depth greater than 4 inches, then the large head probe must also pass through the opening, or you have head entrapment. (area to be tested-use probes)</li> <li>• Openings to be tested.</li> </ul>			
<p>Hardware</p> <ul style="list-style-type: none"> <li>• All fasteners to be tight.</li> <li>• Fasteners, connecting or covering devices not removable without use of tools.</li> </ul>			



	CONDITION	PRIORITY	RECOMMENDATIONS
Surfacing • Adequate drainage provided. • Depth of surfacing material agrees with critical height of equipment. (Use CPSC Chart or matting manufacturer's information.)			
Use Zone • Six feet in all directions from perimeter of equipment, except at slide exits and under swings.			
Spiral Stairway • Shall meet all general requirements for access. • Depth of tread outer edge should be greater than 7 inches for 2-5 years and greater than 8 inches for 5-12 years; both open and closed risers. • Where design does not allow handrails on both sides of stairway, continuous handrail to be provided along outside perimeter of steps.			

Comments

Action Taken:

Date: \_\_\_\_\_

By: \_\_\_\_\_

Supervisor: \_\_\_\_\_

# TABLE 1

## RUNG LADDERS, STEPLADDERS, STAIRWAYS, AND RAMPS (ACCESS SLOPE; TREAD, RUNG AND RAMP WIDTH; TREAD DEPTH; RUNG DIAMETER; AND VERTICAL RISE, BY AGE OF INTENDED USER)

TYPE OF ACCESS	AGE OF INTENDED USER, YEARS		
	2 THROUGH 5	5 THROUGH 12	2 THROUGH 12
Rung Ladders:* • Slope • Total ladder width** • Vertical rise (top of rung to top of rung) • Rung diameter	75 to 90° ≥12 in. (300 mm) ≤12 in.*** (300 mm) 0.95 to 1.55 in. (24-39 mm)	75 to 90° ≥16 in. (400 mm) ≤12 in.*** (300 mm) 0.95 to 1.55 in. (24-39 mm)	75 to 90° ≥16 in. (400 mm) ≤12 in.*** (300 mm) 0.95 to 1.55 in. (24-39 mm)
Stepladders: • Slope • Tread width: Single file access Two-abreast access • Tread depth: Open riser Closed riser • Vertical rise (top of step to top of step)	50 to 75° 12 to 21 in. (300 to 530 mm) * ≥7 in. (180 mm) ≥7 in. (180 mm) ≤9 in. *** (230 mm)	50 to 75° ≥16 in. (400 mm) ≥36 in. (910 mm) ≥3 in. (76 mm) ≥6 in. (150 mm) ≤12 in. *** (300 mm)	50 to 75° 16 to 21 in. (300 to 530 mm) * ≥7 in. (180 mm) ≥7 in. (180 mm) ≤9 in. *** (230 mm)
Stairways: • Slope • Tread width: Single file access Two-abreast access • Tread depth: Open riser Closed riser • Vertical rise (top of step to top of step)	<50° ≥12 in. (300 mm) ≥30 in. (760 mm) ≥7 in. (180 mm) ≥7 in. (180 mm) ≤9 in. *** (230 mm)	<50° ≥16 in. (400 mm) ≥36 in. (910 mm) ≥8 in. (200 mm) ≥8 in. (200 mm) ≤12 in. *** (300 mm)	<50° ≥16 in. (400 mm) ≥36 in. (910 mm) ≥8 in. (200 mm) ≥8 in. (200 mm) ≤9 in. *** (230 mm)
Ramps (doesn't address wheelchair use): • Slope (vertical/horizontal) • Width: Single file access Two-abreast access	≤1:8 ≥12 in. (300 mm) ≥30 in. (760 mm)	≤1:8 ≥16 in. (400 mm) ≥36 in. (910 mm)	≤1:8 ≥16 in. (400 mm) ≥36 in. (910 mm)

\* Not recommended as sole access for preschoolers.

\*\* Excluding side supports.

\*\*\* Entrapment provisions apply.

Foot Note: Information reproduced from ASTM F1487, Standard Consumer "Safety Performance Specification for Playground Equipment for Public Use."



## PLATFORMS

Playground: \_\_\_\_\_ Materials: \_\_\_\_\_  
 Location: \_\_\_\_\_ Surface: \_\_\_\_\_  
 Inspected By: \_\_\_\_\_ Ages of Intended Users: \_\_\_\_\_  
 Location of Piece: \_\_\_\_\_ Weather: \_\_\_\_\_  
 Height: \_\_\_\_\_ Date of Audit: \_\_\_\_\_

**PRIORITY**

1. Life threatening, permanent disability
2. Serious or non-disabling injury
3. Slight injury or may not have caused injury but does not meet ASTM F1487 or CPSC Handbook for Public Playground Safety

	CONDITION	PRIORITY	RECOMMENDATIONS
Design <ul style="list-style-type: none"> <li>Platforms to be within +2 degrees of a horizontal plane.</li> <li>Openings provided to allow for drainage.</li> </ul>			
Guardrail <ul style="list-style-type: none"> <li>Elevated surface (2-5 years old) more than 20 inches high to have guardrail.</li> <li>Top surface of guardrail (2-5 years old) to be 29 inches high and bottom surface no more than 23 inches above platform.</li> <li>Elevated surface (5-12 years old) more than 30 inches high to have guardrail.</li> <li>Top surface of guardrail (5-12 years old) to be 38 inches high and bottom surface no more than 28 inches above platform.</li> <li>Guardrails shall completely surround elevated surface except for necessary entrances and exits.</li> <li>The maximum clear opening without a top horizontal guardrail shall be 15 inches (380mm). Stairs, ramps and upper body equipment exempted.</li> </ul>			
Protective Barrier <ul style="list-style-type: none"> <li>Elevated surface (2-5 years old) more than 30 inches high to have protective barrier.</li> <li>Top surface of protective barrier (2-5 years old) to be 29 inches high and non-climbable.</li> <li>Elevated surface (5-12 years old) more than 48 inches high to have protective barrier.</li> <li>Top surface of protective barrier (5-12 years old) to be 38 inches high and non-climbable.</li> <li>Protective barriers shall completely surround elevated surface except for necessary entrances and exits.</li> <li>The maximum clear opening without a top horizontal guardrail shall be 15 inches (380mm). Stairs, ramps and upper body equipment exempted.</li> </ul>			
Stepped Platforms <ul style="list-style-type: none"> <li>The maximum difference in height between stepped platforms should be:                2-5 years old: 12 inches                5-12 years old: 18 inches</li> <li>If the space exceeds 9 inches and the height of the lower platform exceeds 20 inches for 2-5 years old or 30 inches for 5-12 years old, infill to be used to reduce space to less than 3-1/2 inches.</li> </ul>			



	CONDITION	PRIORITY	RECOMMENDATIONS
<p>Sharp Points, Corners and Edges</p> <ul style="list-style-type: none"> <li>• There are no sharp points, corners or edges. Wood to be smooth and no splinters.</li> </ul>			
<p>Protrusions</p> <ul style="list-style-type: none"> <li>• There are no protrusions. Projections to be tested.</li> </ul>			
<p>Entrapment Angles</p> <ul style="list-style-type: none"> <li>• All angles to be greater than 55 degrees, unless lower leg is horizontal or projects downwards.</li> </ul>			
<p>Entrapment – Head and Body</p> <ul style="list-style-type: none"> <li>• For all completely bound openings, if the small torso probe can be inserted into the opening to a depth greater than 4 inches, then the large head probe must also pass through the opening, or you have head entrapment. (area to be tested-use probes)</li> <li>• Openings to be tested.</li> </ul>			
<p>Hardware</p> <ul style="list-style-type: none"> <li>• All fasteners to be tight.</li> <li>• Fasteners, connecting or covering devices not removable without use of tools.</li> </ul>			

Comments

Action Taken:

Date: \_\_\_\_\_

By: \_\_\_\_\_

Supervisor: \_\_\_\_\_



## SLIDES

Playground: \_\_\_\_\_ Materials: \_\_\_\_\_  
 Location: \_\_\_\_\_ Surface: \_\_\_\_\_  
 Inspected By: \_\_\_\_\_ Ages of Intended Users: \_\_\_\_\_  
 Location of Piece: \_\_\_\_\_ Weather: \_\_\_\_\_  
 Height: \_\_\_\_\_ Date of Audit: \_\_\_\_\_

**PRIORITY**

1. Life threatening, permanent disability
2. Serious or non-disabling injury
3. Slight injury or may not have caused injury but does not meet ASTM F1487 or CPSC Handbook for Public Playground Safety

**Slides**

- Straight                       Tube                               Half-Tube  
 Spiral                               Embankment                       Roller

	CONDITION	PRIORITY	RECOMMENDATIONS
Layout • Metal slides are in a shaded area. • Located in uncongested area.			
Stability • Footings are stable and buried below ground level or covered by protective surfacing.			
Corrosion • No corrosion or visible rotting.			
Slide Access • <b>Rung Ladder:</b> Slope (75-90 degrees) <i>See attached ladder chart for tread width, tread depth and vertical rise.</i> • <b>Step Ladder:</b> Slope (50-75 degrees) <i>See attached ladder chart for tread width, tread depth and vertical rise.</i> • <b>Stairway:</b> Slope (less than 50 degrees) <i>See attached ladder chart for tread width, tread depth and vertical rise.</i> • Ladder rung diameter: .95-1.55 inches • Handrail diameter: .95-1.55 inches • Continuous handrails provided with handrail height between 22 inches and 38 inches.			



	CONDITION	PRIORITY	RECOMMENDATIONS
<p>Slide Platform</p> <ul style="list-style-type: none"> <li>• Minimum length of 14 inches</li> <li>• Width equal or greater than width of slide.</li> <li>• Guardrails or protective barriers to surround platform.</li> <li>• No spaces or gaps between platform and start of sliding surface.</li> <li>• Handholds provided at slide entrance.</li> <li>• Means provided to channel user into sitting position (guardrail or hood that does not encourage climbing).</li> </ul>			
<p>Sliding Surface</p> <ul style="list-style-type: none"> <li>• Average incline of no more than 30 degrees.</li> <li>• Flat open chutes to have minimum side height of 4 inches extending full length of slide.</li> <li>• Sides to be an integral part of chute without gaps between side and sliding surface.</li> <li>• Clear area 21 inches wide, for entire length of slide, on either side of slide.</li> </ul>			
<p>Exit Region</p> <ul style="list-style-type: none"> <li>• All slides to have an exit region.</li> <li>• 11 inches minimum exit region length.</li> <li>• Slides no more than 4 feet high to have an exit region height of 11 inches.</li> <li>• Slides over 4 feet high to have an exit region between 7 inches and 15 inches above protective surface.</li> <li>• Slide exit edges to be rounded or curved.</li> <li>• Radius of exit region curvature shall be 30 inches or greater.</li> </ul>			
<p>Embankment Slide</p> <ul style="list-style-type: none"> <li>• Same as straight slide (where applicable).</li> <li>• Means provided to prevent use of skateboards and bicycles.</li> </ul>			
<p>Spiral Slides</p> <ul style="list-style-type: none"> <li>• Same as straight slides.</li> <li>• Only short spiral slides for 2-5 year old children.</li> <li>• Clear area, 21 inches wide, for entire length of slide, from inside face of sidewall to outer edge of slide.</li> </ul>			
<p>Tube Slides</p> <ul style="list-style-type: none"> <li>• Same as straight slides.</li> <li>• Min. internal diameter not less than 23 inches.</li> <li>• Top surface of tube to have textured surface to prevent sliding on top of tube.</li> <li>• Consideration should be given to extra supervision on playgrounds having tube slides or to have transparent tube sections for observation and supervision.</li> </ul>			



	CONDITION	PRIORITY	RECOMMENDATIONS
<p>Roller Slides</p> <ul style="list-style-type: none"> <li>• Meet all general slide requirements.</li> <li>• No crush, shear, entrapment, entanglement or catch points. Must not admit 3/16 inch diameter neoprene rod.</li> <li>• No missing rollers or broken bearings.</li> </ul>			
<p>Guardrail</p> <ul style="list-style-type: none"> <li>• Elevated surface (2-5 years old) more than 20 inches high to have guardrail.</li> <li>• Top surface of guardrail (2-5 years old) to be 29 inches high and bottom surface no more than 23 inches above platform.</li> <li>• Elevated surface (5-12 years old) more than 30 inches high to have guardrail.</li> <li>• Top surface of guardrail (5-12 years old) to be 38 inches high and bottom surface no more than 28 inches above platform.</li> </ul>			
<p>Protective Barrier</p> <ul style="list-style-type: none"> <li>• Elevated surface (2-5 years old) more than 30 inches high to have protective barrier.</li> <li>• Top surface of protective barrier (2-5 years old) to be 29 inches high and non-climbable.</li> <li>• Elevated surface (5-12 years old) more than 48 inches high to have protective barrier.</li> <li>• Top surface of protective barrier (5-12 years old) to be 38 inches high and non-climbable.</li> </ul>			
<p>Sharp Points, Corners and Edges</p> <ul style="list-style-type: none"> <li>• There are no sharp points, corners or edges. Wood to be smooth and no splinters.</li> </ul>			
<p>Protrusions</p> <ul style="list-style-type: none"> <li>• There are no protrusions. Protrusions to be tested.</li> </ul>			
<p>Entrapment Angles</p> <ul style="list-style-type: none"> <li>• All angles to be greater than 55 degrees, unless lower leg is horizontal or projects downwards. (Use partially bounded test.)</li> </ul>			
<p>Entrapment – Head and Body</p> <ul style="list-style-type: none"> <li>• For all completely bound openings, if the small torso probe can be inserted into the opening to a depth greater than 4 inches, then the large head probe must also pass through the opening, or you have head entrapment. (area to be tested-use probes)</li> <li>• Openings to be tested.</li> </ul>			



	CONDITION	PRIORITY	RECOMMENDATIONS
<p>Hardware</p> <ul style="list-style-type: none"> <li>• All fasteners to be tight.</li> <li>• Fasteners, connecting or covering devices not removable without use of tools.</li> </ul>			
<p>Surfacing</p> <ul style="list-style-type: none"> <li>• Adequate drainage provided.</li> <li>• Depth of surfacing material agrees with critical height of equipment. (Use CPSC Chart or matting manufacturer's information.)</li> </ul>			
<p>Use Zone</p> <ul style="list-style-type: none"> <li>• 6 feet in all directions from perimeter of equipment. Exit region requires special attention.</li> <li>• Use zone at the exit of the slide to extend a minimum of 6 feet from the end of the slide to a maximum of 8 feet from the exit end of the slide.</li> </ul>			

Comments

Action Taken:

Date: \_\_\_\_\_

By: \_\_\_\_\_

Supervisor: \_\_\_\_\_

## SWINGS

Playground: \_\_\_\_\_ Materials: \_\_\_\_\_  
 Location: \_\_\_\_\_ Surface: \_\_\_\_\_  
 Inspected By: \_\_\_\_\_ Ages of Intended Users: \_\_\_\_\_  
 Location of Piece: \_\_\_\_\_ Weather: \_\_\_\_\_  
 Height: \_\_\_\_\_ Date of Audit: \_\_\_\_\_

**PRIORITY**

1. Life threatening, permanent disability
2. Serious or non-disabling injury
3. Slight injury or may not have caused injury but does not meet ASTM F1487 or CPSC Handbook for Public Playground Safety

**Swings**

- Single-Axis Swing       Multi-Occupancy       Swinging Exercise Rings/Trapeze Bar  
 Multi-Axis Swing       Rope Swing       Tot Swing

	CONDITION	PRIORITY	RECOMMENDATIONS
<b>Location</b> • Swings to be located away from other equipment and activities.			
<b>Stability</b> • Footings stable and buried below ground level or covered by protective surfacing.			
<b>Corrosion and Wear</b> • No rotting, corrosion or visible wear on chain and S-hooks.			
<b>Structure Design</b> • Single axis swings to have no more than two swings per bay. • Single axis swings not to be attached to composite structure. • A-frame support structures not to have horizontal cross bars. • Tot swing to be suspended from structures separate from other swings or suspended in a different bay of the same structure.			
<b>Seat Design and Placement</b> • Seats designed for only one user at a time. • Wood or metal seats not to be used. • Tot seats to have support on all sides and not present a strangulation hazard. • Swing hangers spaced wider than seats, not less than 20 inches. • 24 inches minimum clearance between seats. • 30 inches minimum clearance between seat and structure, measured 5 feet above protective surface. • All S-hooks to be closed completely.			
<b>Clearances</b> • Vertical distance at least 12 inches between underside of occupied seat and protective surface.			



	CONDITION	PRIORITY	RECOMMENDATIONS
<p>Multi-Axis Tire Swings</p> <ul style="list-style-type: none"> <li>• Tire swings not suspended from a structure having other swings in the same bay.</li> <li>• Steel-belted radials to be closely examined to insure no exposed steel belts.</li> <li>• Drain holes to be provided.</li> <li>• No heavy truck tires, plastic may be used.</li> <li>• Due to added stress of rotation, inspect all hanger mechanisms for wear.</li> <li>• No accessible crush points.</li> <li>• All S-hooks to be closed completely, .04 inches.</li> <li>• Only one rotating swing in each bay. No limit on number of bays.</li> <li>• Tire swings not to be attached to composite structure.</li> <li>• May accommodate more than one user. Weight no more than 35 lbs.</li> </ul>			
<p>Swings for Pre-School Children</p> <ul style="list-style-type: none"> <li>• Pivot points no greater than 95 inches above protective surfacing.</li> </ul>			
<p>Minimum Clearance</p> <ul style="list-style-type: none"> <li>• The minimum clearance between the seating surface of tire and the uprights of supporting structure to be 30 inches when tire is in a position closest to support structure.</li> </ul>			
<p>Swings Not Recommended for Public Playground</p> <ul style="list-style-type: none"> <li>• Multiple occupancy swing (tire swings are the exception).</li> <li>• Animal figure swing.</li> <li>• Free swinging rope swings.</li> <li>• Swinging exercise rings and trapeze bars. (This does not apply to overhead rings.)</li> </ul>			
<p>Sharp Points, Corners and Edges</p> <ul style="list-style-type: none"> <li>• There are no sharp points, corners or edges. Wood to be smooth and no splinters.</li> </ul>			
<p>Protrusions</p> <ul style="list-style-type: none"> <li>• There are to be no protrusions. Projections to be tested.</li> </ul>			
<p>Entrapment Angles</p> <ul style="list-style-type: none"> <li>• All angles to be greater than 55 degrees, unless lower leg is horizontal or projects downwards.</li> </ul>			
<p>Entrapment – Head and Body</p> <ul style="list-style-type: none"> <li>• For all completely bound openings, if the small torso probe can be inserted into the opening to a depth greater than 4 inches, then the large head probe must also pass through the opening, or you have head entrapment. (area to be tested-use probes)</li> <li>• Openings to be tested.</li> </ul>			



	CONDITION	PRIORITY	RECOMMENDATIONS
<p>Hardware</p> <ul style="list-style-type: none"> <li>• All fasteners to be tight.</li> <li>• Fasteners, connecting or covering devices not removable without use of tools.</li> <li>• Hangers shall have bearings, bushings or other means of reducing friction and wear.</li> </ul>			
<p>Surfacing</p> <ul style="list-style-type: none"> <li>• Adequate drainage provided.</li> <li>• Depth of surfacing material agrees with critical height of equipment. (Use CPSC Chart or matting manufacturer's information.)</li> </ul>			
<p>Use Zone</p> <ul style="list-style-type: none"> <li>• Six feet from side perimeters of equipment.</li> <li>• <b>Single-Axis Swings:</b> Minimum distance of 2 times the height of the pivot point (applies to both in front of and behind pivot point) to the surface.</li> <li>• <b>Multi-Axis Tire Swing:</b> Minimum distance in all directions of 6 feet + length of supporting member.</li> <li>• <b>Tot Swing:</b> Minimum distance of 2 times the height of the pivot point to the bottom of the occupied seat.</li> </ul>			

Comments

Action Taken:

Date: \_\_\_\_\_

By: \_\_\_\_\_

Supervisor: \_\_\_\_\_

## CLIMBING & UPPER BODY EQUIPMENT

Playground: \_\_\_\_\_ Materials: \_\_\_\_\_  
 Location: \_\_\_\_\_ Surface: \_\_\_\_\_  
 Inspected By: \_\_\_\_\_ Ages of Intended Users: \_\_\_\_\_  
 Location of Piece: \_\_\_\_\_ Weather: \_\_\_\_\_  
 Height: \_\_\_\_\_ Date of Audit: \_\_\_\_\_

**PRIORITY**

1. Life threatening, permanent disability
2. Serious or non-disabling injury
3. Slight injury or may not have caused injury but does not meet ASTM F1487 or CPSC Handbook for Public Playground Safety

Climbing and Upper Body Equipment

Arch Climbers     
  Sliding Poles     
  Track Rides     
  Other \_\_\_\_\_  
 Horizontal Ladders     
  Balance Beams     
  Roofs     
 \_\_\_\_\_

	CONDITION	PRIORITY	RECOMMENDATIONS
Stability • Footings are stable and buried below ground level or covered by protective surfacing.			
Corrosion • No corrosion or visible rotting.			
Design • Climbers not to have climbing bars or structural components in the interior of the structure onto which a child may fall more than 18 inches. • Climbing devices intended for 2-5 year olds to offer an easy way out. • Flexible access devices should not be used as sole access to other components. • Designated play surfaces on climbing equipment should be limited to: - 2-5 year olds: 60 inches high - 5-12 year olds: 84 inches high (CPSC)			
Climbers With Non-Rigid Components • Connections between ropes, cables, or chains within the climbing grid to be securely fixed. • Spacing between the horizontal and vertical climbing grid to satisfy all entrapment criteria. • Flexible grid climbing devices not recommended as sole access to equipment for children ages 2-5 years of age. • Flexible climbing devices to be securely anchored at both ends. • Bottom anchoring device to be below the level of playing surface. • For pre-school, users should be able to bring both feet to the same level before ascending to next level.			

	CONDITION	PRIORITY	RECOMMENDATIONS
<p>Arch Climbers</p> <ul style="list-style-type: none"> <li>• Free-standing arch climbers not recommended for 2-5 year olds.</li> <li>• Hand or foot rung diameter to be between .95 – 1.55 inches.</li> <li>• Spacing of rungs on arch climbers to follow recommendations for rung ladders (see Table 2 – CPSC or ASTM).</li> <li>• Spacing between the horizontal and vertical components should satisfy all entrapment criteria.</li> <li>• Arch climbers should not be the sole means of access to equipment.</li> <li>• Arch ladders as access shall have means of hand support while climbing.</li> </ul>			
<p>Horizontal Ladder and Overhead Rings</p> <ul style="list-style-type: none"> <li>• To be used only by 4-12 year olds (CPSC), 2-12 years (ASTM).</li> <li>• Space between adjacent rungs of overhead ladders to be greater than 9 inches.</li> <li>• Center-to-center spacing of overhead rungs not to exceed 15 inches (this does not apply to the spacing of overhead rings).</li> <li>• The first handhold not placed directly above the platform or climbing rungs.</li> <li>• Horizontal distance from take-off landing to first handhold no greater than 10 inches. Where access and egress are rungs, horizontal distance to first handhold between 8 inches and 10 inches.</li> <li>• Maximum height: 2-5 years old – 60 inches 5-12 years old – 84 inches</li> <li>• Maximum height of landing structure: 2-5 years old – 18 inches above protective surface 5-12 years old – 36 inches above protective surface</li> </ul>			
<p>Sliding Poles</p> <ul style="list-style-type: none"> <li>• Not recommended for 2-5 year olds (CPSC).</li> <li>• Sliding poles to be continuous with no protruding welds or seams along sliding surface.</li> <li>• Sliding pole not to change direction along the sliding portion.</li> <li>• Horizontal distance between sliding pole and the edge of the platform or other structure used for access to be no less than 18 inches and no more than 20 inches.</li> <li>• Sliding pole to extend at least 60 inches above level of the platform.</li> <li>• The diameter of the sliding pole to be no greater than 1.9 inches.</li> <li>• Upper access to pole from one height only.</li> <li>• Maximum horizontal dimension to 15 inches at platform opening.</li> </ul>			
<p>Climbing Ropes</p> <ul style="list-style-type: none"> <li>• Vertically suspended climbing ropes must be securely anchored to a footing.</li> <li>• Climbing ropes secured at both ends, shall not be capable of forming loops of more than 5 inches in diameter.</li> </ul>			
<p>Balance Beams</p> <ul style="list-style-type: none"> <li>• Maximum height: 2-5 years old – 12 inches 5-12 years old – 16 inches</li> <li>• Support posts for balance beam shall not pose a tripping hazard.</li> </ul>			
<p>Roofs</p> <ul style="list-style-type: none"> <li>• Should contain no designated play surfaces.</li> </ul>			



	CONDITION	PRIORITY	RECOMMENDATIONS
<p>Track Rides</p> <ul style="list-style-type: none"> <li>• Not recommended for children under 5 years old.</li> <li>• Lowest portion of hand-gripping component minimum 64 inches.</li> <li>• Elevated landings minimum 36 inches long, 32 inches wide.</li> <li>• Must not obstruct user in landing area.</li> <li>• Center to center distance between adjacent tracks 48 inches or more.</li> </ul>			
<p>Sharp Points, Corners and Edges</p> <ul style="list-style-type: none"> <li>• There are no sharp points, corners or edges. Wood to be smooth and no splinters.</li> </ul>			
<p>Protrusions</p> <ul style="list-style-type: none"> <li>• There are no protrusions. Projections to be tested.</li> </ul>			
<p>Entrapment Angles</p> <ul style="list-style-type: none"> <li>• All angles to be greater than 55 degrees, unless lower leg is horizontal or projects downwards. Test for partially bounded openings.</li> </ul>			
<p>Entrapment – Head and Body</p> <ul style="list-style-type: none"> <li>• For all completely bound openings, if the small torso probe can be inserted into the opening to a depth greater than 4 inches, then the large head probe must also pass through the opening, or you have head entrapment. (area to be tested-use probes)</li> <li>• Opening to be tested.</li> </ul>			
<p>Hardware</p> <ul style="list-style-type: none"> <li>• All fasteners to be tight.</li> <li>• Fasteners, connecting or covering devices not removable without use of tools.</li> </ul>			
<p>Surfacing</p> <ul style="list-style-type: none"> <li>• Adequate drainage provided.</li> <li>• Depth of surfacing material agrees with critical height of equipment. (Use CPSC Chart or matting manufacturer's information.)</li> </ul>			
<p>Use Zone</p> <ul style="list-style-type: none"> <li>• Six feet in all directions from perimeter of equipment.</li> </ul>			

Comments

Action Taken:

Date: \_\_\_\_\_

By: \_\_\_\_\_

Supervisor: \_\_\_\_\_



## ROTATING AND ROCKING EQUIPMENT

Playground: \_\_\_\_\_ Materials: \_\_\_\_\_  
 Location: \_\_\_\_\_ Surface: \_\_\_\_\_  
 Inspected By: \_\_\_\_\_ Ages of Intended Users: \_\_\_\_\_  
 Location of Piece: \_\_\_\_\_ Weather: \_\_\_\_\_  
 Height: \_\_\_\_\_ Date of Audit: \_\_\_\_\_

**PRIORITY**

1. Life threatening, permanent disability
2. Serious or non-disabling injury
3. Slight injury or may not have caused injury but does not meet ASTM F1487 or CPSC Handbook for Public Playground Safety

### Rotating and Rocking Equipment

- Merry-Go-Rounds      Spring Rockers      Log Rolls  
 Seesaws      Trampolines      Others \_\_\_\_\_

	CONDITION	PRIORITY	RECOMMENDATIONS
Stability • Footings are stable and buried below ground level or covered by protective surfacing.			
Corrosion • No corrosion or visible rotting.			
Merry-go-rounds • The rotating platform to be continuous and approximately circular. • The difference between the minimum and maximum radii of a non-circular platform not to exceed 2.0 inches. • No component of the apparatus, including the handgrips, should extend beyond the perimeter of the platform. • Children to be provided with handgrips with a diameter between .95 and 1.55 inches. • No accessible shearing or crushing mechanisms in the undercarriage. • The surface of the platform to be continuous with no openings between the axis and the outside edge that allow a 5/16 inch diameter rod to pass through the surface. • A means to limit the peripheral speed of rotation to a maximum of 13 feet per second. • No oscillatory (up and down) motion. • Maximum height of platform – 14 inches above protective surface (underside no less than 9 inches above surface). Platforms less than 20 inches diameter exempt. • Handgrips shall be provided or platform should be tub or dishlike.			
Log Rolls • Require hand-gripping components. • Not recommended for children ages 2-5 years. • Hand-gripping components between .95-1.55 inches. • Highest point of roller logs no more than 18 inches above surface.			



	CONDITION	PRIORITY	RECOMMENDATIONS
<p>Seesaws</p> <ul style="list-style-type: none"> <li>• Not recommended for 2-5 year old children unless they are equipped with a spring centering device.</li> <li>• Partial car tires or some other shock absorbing material to be embedded in the ground underneath the seats of fulcrum seesaws, or secured on the underside of the seats.</li> <li>• Handholds to be provided at each seating position for gripping with both hands and should not turn when grasped.</li> <li>• Handgrips for two hands minimum length of 6 inches, should not protrude beyond seat sides.</li> <li>• Diameter of handgrips to be between .95 – 1.55 inches.</li> <li>• Handholds are not to protrude beyond the side of the seat.</li> <li>• Footrests are not to be provided on fulcrum seesaws unless they are equipped with a spring centering device.</li> <li>• Maximum attainable seat height – 5 feet above the surface.</li> <li>• Fulcrum should not present a crush hazard.</li> </ul>			
<p>Spring Rocking Equipment</p> <ul style="list-style-type: none"> <li>• Seat design to minimize the likelihood of the rocker being used by more than the intended number of users.</li> <li>• Each seating position to be equipped with handgrips and footrests.</li> <li>• Diameter of handgrips to be between .95 – 1.55 inches.</li> <li>• The spring should not crush children's hands or feet between coils or between the spring and any part of the rocker.</li> <li>• Handgrips for one hand – minimum length – 3 inches. Handgrips for two hands – minimum length – 6 inches. Footrests – minimum width of 3.5 inches.</li> <li>• Installed height of seat (unloaded and at rest) not less than 14 inches nor more than 28 inches above platform surface.</li> </ul>			
<p>Trampolines</p> <ul style="list-style-type: none"> <li>• Not recommended for use on public playgrounds.</li> </ul>			
<p>Sharp Points, Corners and Edges</p> <ul style="list-style-type: none"> <li>• There are no sharp points, corners or edges. Wood to be smooth and no splinters.</li> </ul>			
<p>Protrusions</p> <ul style="list-style-type: none"> <li>• There are no protrusions. Projections to be tested.</li> </ul>			
<p>Entrapment Angles</p> <ul style="list-style-type: none"> <li>• All angles to be greater than 55 degrees, unless lower leg is horizontal or projects downwards.</li> </ul>			



	CONDITION	PRIORITY	RECOMMENDATIONS
<p>Entrapment – Head and Body</p> <ul style="list-style-type: none"> <li>• For all completely bound openings, if the small torso probe can be inserted into the opening to a depth greater than 4 inches, then the large head probe must also pass through the opening, or you have head entrapment. (area to be tested-use probes)</li> <li>• Openings to be tested.</li> </ul>			
<p>Hardware</p> <ul style="list-style-type: none"> <li>• All fasteners to be tight.</li> <li>• Fasteners, connecting or covering devices not removable without use of tools.</li> </ul>			
<p>Surfacing</p> <ul style="list-style-type: none"> <li>• Adequate drainage provided.</li> <li>• Depth of surfacing material agrees with critical height of equipment. (Use CPSC Chart or matting manufacturer's information.)</li> </ul>			
<p>Use Zone</p> <ul style="list-style-type: none"> <li>• Merry-Go-Rounds: Use zone to extend 6 feet beyond the perimeter of the platform.</li> <li>• Seesaws: Use zone to extend a minimum of 6 feet in all directions from the perimeter of the equipment.</li> <li>• Spring Rocking Equipment: Use zone to extend a minimum of 6 feet from the "at rest" perimeter of equipment. Adjacent spring rockers with a maximum seat height of 30 inches when intended for sitting, may share the same use zone.</li> <li>• When intended for standing, use zone to be no less than 7 feet in all directions, from at rest perimeter.</li> </ul>			

Comments

Action Taken:

Date: \_\_\_\_\_

By: \_\_\_\_\_

Supervisor: \_\_\_\_\_

## SURFACING

Playground: \_\_\_\_\_ Materials: \_\_\_\_\_  
 Location: \_\_\_\_\_ Surface: \_\_\_\_\_  
 Inspected By: \_\_\_\_\_ Ages of Intended Users: \_\_\_\_\_  
 Location of Piece: \_\_\_\_\_ Weather: \_\_\_\_\_  
 Height: \_\_\_\_\_ Date of Audit: \_\_\_\_\_

**PRIORITY**

1. *Life threatening, permanent disability*
2. *Serious or non-disabling injury*
3. *Slight injury or may not have caused injury but does not meet ASTM F1487 or CPSC Handbook for Public Playground Safety*

	CONDITION	PRIORITY	RECOMMENDATIONS
<p>Shock Absorbency of Surfacing Material</p> <ul style="list-style-type: none"> <li>Surfacing material must yield both a peak deceleration of no more than 200 G's and a HIC (Head Injury Criteria) of no more than 1,000 when tested in accordance with procedures described in ASTM F1292 "A Standard Specification for Impact Attenuation of Surface Systems Under and Around Playground Equipment."</li> </ul>			
<p>Critical Height</p> <ul style="list-style-type: none"> <li>The surfacing material used under and around a particular piece of playground equipment is to have a Critical Height value as identified for each type of equipment.</li> </ul>			
<p>Fall Height for Equipment</p> <ul style="list-style-type: none"> <li><b>Swings:</b> The highest accessible part of a swing is the height of the pivot point where the swing's suspending elements connect to the supporting structure.</li> <li><b>Elevated Platforms:</b> The highest accessible part is the height of the platform surface above the playing surface.</li> </ul>			



	CONDITION	PRIORITY	RECOMMENDATIONS
<p>Fall Heights for Equipment (cont'd)</p> <ul style="list-style-type: none"> <li>• Horizontal Ladders: The highest accessible part is the maximum height of the structure.</li> <li>• Merry-Go-Rounds: The highest accessible part is the height above the ground of any part at the perimeter on which a child may sit or stand.</li> <li>• Seesaws: The highest accessible part is the maximum height attainable by any part of the seesaw.</li> <li>• Spring Rockers: The highest accessible part is the maximum height above the playing surface of the seat or designated play surface.</li> <li>• Climbers: Free-standing – highest part of the climbing equipment Access / Egress – highest part of the climber intended for foot support.</li> </ul>			
<p>Acceptability of Various Surfacing Materials</p> <ul style="list-style-type: none"> <li>• Hard surfacing materials, such as asphalt or concrete, are unsuitable for use under and around playground equipment.</li> <li>• Earth surfaces such as soils and hard packed dirt are unsuitable for use under and around playground equipment.</li> <li>• Grass and turf are unsuitable for use under and around playground equipment.</li> </ul> <p><b>Unitary Materials:</b> (<i>rubber mats or rubberlike materials</i>):</p> <ul style="list-style-type: none"> <li>• To have identification of Critical Height rating. This information is to be attained from the manufacturer of this material.</li> </ul> <p><b>Loose-Fill Material:</b></p> <ul style="list-style-type: none"> <li>• Not to be installed over hard surfaces such as asphalt or concrete.</li> <li>• Requires a method of containment.</li> <li>• Requires good drainage under material.</li> <li>• Requires periodic renewal or replacement and continuous maintenance to maintain proper depth and remove foreign matter.</li> <li>• Refer to table listing the critical height (expressed in feet) for seven loose fill materials when tested in an uncompressed state at depths of 6, 9 and 12 inches. This test was conducted by CPSC staff in accordance with the voluntary ASTM F1292 standard.</li> </ul> <ul style="list-style-type: none"> <li>• Surface materials for accessibility must pass ASTM Test F1951.</li> </ul>			
<p>Use Zones for Equipment</p> <ul style="list-style-type: none"> <li>• The area beneath and immediately adjacent to equipment that is designated for unrestricted circulation and on whose surface it is predicted that a user would land when falling from or exiting the equipment. Surface shall meet requirements of ASTM F1292 from the maximum fall height.</li> </ul>			



	CONDITION	PRIORITY	RECOMMENDATIONS
<p>Recommendations for Use Zone</p> <ul style="list-style-type: none"> <li>• Stationary Equipment: The use zone is to extend a minimum of 6 feet in all directions from the perimeter of the equipment.</li> <li>• Slides: The use zone in front of the exit of the slide is to extend a minimum distance of 6 feet from the end of the slide chute or a maximum of 8 feet whichever is the greater.</li> <li>• Single-Axis Swings: The use zone is to extend to the front and rear of a single axis swing a minimum distance of 2 times the height of the pivot point above the surfacing material.</li> <li>• Multi-Axis Swings: The use zone is to extend in any direction from a minimum distance of 6 feet + the length of the suspending members.</li> <li>• Merry-Go-Rounds: The use zone is to extend a minimum of 6 feet beyond the perimeter of the platform.</li> <li>• Spring Rocking Equipment: The use zone is to extend a minimum of 6 feet from the perimeter of the equipment but adjacent spring rockers with a maximum seat height of 30 inches may share the same use zone. Rocking equipment meant for standing requires a use zone of 7 feet; use zones may not be shared.</li> </ul>			

Comments

Action Taken:

Date: \_\_\_\_\_

By: \_\_\_\_\_

Supervisor: \_\_\_\_\_



TABLE 2

CRITICAL HEIGHTS (IN FEET) OF TESTED MATERIALS

MATERIAL	UNCOMPRESSED DEPTH			COMPRESSED DEPTH
	6 INCH	9 INCH	12 INCH	9 INCH
Wood Chips*	7	10	11	10
Double Shredded Bark Mulch	6	10	11	7
Engineered Wood Fibers**	6	7	>12	6
Fine Sand	5	5	9	5
Coarse Sand	5	5	6	4
Fine Gravel	6	7	10	6
Medium Gravel	5	5	6	5
Shredded Tires***	10-12	N/A	N/A	N/A

\* This product was referred to as Wood Mulch in previous versions of this handbook. The term Wood Chips more accurately describes the product.

\*\* This product was referred to as Uniform Wood Chips in previous versions of this handbook. In the playground industry, the product is more commonly known as Engineered Wood Fibers.

\*\*\* This data is from tests conducted by independent testing laboratories on a 6 inch depth of uncompressed shredded tire samples produced by four manufacturers. The tests reported critical heights which varied from 10 feet to greater than 12 feet. It is recommended that persons seeking to install shredded tires as a protective surface request test data from the supplier showing the critical height of the material when it was tested in accordance with ASTM F1292.

Foot Note: Information reproduced for the 1997 publication of the CPSC "Handbook for Public Playground Safety."





## INTRODUCING PLAYWORLD SYSTEMS, INCORPORATED

**P**layworld Systems®, Inc. is a leading producer of high-quality commercial playground equipment, park and site amenities, and sports and fitness systems. The company combines a strong, well-balanced management team with state-of-the-art manufacturing facilities including a metal shop and an aluminum foundry. Playworld Systems is well-known in the industry for its leadership role in designing truly innovative products, establishing safety guidelines, and providing extraordinary service.

**Location:** Playworld Systems is headquartered in Lewisburg, PA in a new 265,000 square foot, state-of-the-art manufacturing facility with world class offices, design center and training complex. With over 200 employees, Playworld Systems is a significant factor in the local economy. Lewisburg is easily accessible through Harrisburg International Airport, Williamsport Regional Airport, or State College, University Park Airport and by car via US Route 15 and Interstate 80.

**Management:** Playworld Systems' management team is headed by President Dale Miller, who has more than 30 years of experience in the playground industry. It includes people with strong backgrounds in sales, marketing, engineering, quality, finance, exporting and manufacturing from a variety of companies including Champion International, Pennsylvania House Furniture, and Disney.

The company is dedicated to a close team concept of management and encourages dialogue and interaction among all employees to facilitate a caring, responsive company with which people want to do business and where quality people want to work.

**History:** Playworld Systems was incorporated in 1952 as a manufacturer of precision machine parts. The company began manufacturing playground equipment in 1959 as a supplier of high-quality products to other companies. Due to increasing demand for its products and growth in the playground and recreation markets, Playworld Systems began marketing its own brand of products in 1971. Since that time, Playworld Systems has experienced phenomenal growth, becoming one of the top company's in the industry. In 1987 a new division called PlayDesigns® was created to produce products specifically for the early childhood market. In 1992 the company launched an aggressive International marketing strategy dedicated to expanding sales in foreign markets. In 1995 and 1998 Playworld Systems received the prestigious PA Governor's Export Award in recognition of its highly successful International strategy. The company has experienced a strong positive growth since its inception and is now one of the five largest playground manufacturers in the United States.

**Products:** The company manufactures and markets products under the brand names of Playworld Systems® and PlayDesigns®.

**Playworld Systems'** products are designed and marketed to serve parks, schools, and the commercial market with emphasis on playgrounds for children ages 5-12 years, and is noted for its unparalleled selection of styles, colors, and play components. With the new GroundZero®, SkyTowers®, and CityScapes™ playground design concepts we have changed the way playgrounds are designed. Playworld Systems offers two different modular systems (Playmakers® and Challengers®), 22 powder-coated paint colors, 8 colors of molded plastic, and hundreds of individual components – the largest selection of quality components in the entire industry!

**PlayDesigns'** products are designed and marketed to schools and day care centers focusing on playgrounds for children ages 8 months to 6 years, and is noted for its unique scaling, design, and play value for the early childhood market. Products are designed to enhance developmental skills, both physical and mental, while encouraging active social interaction. Attention to anthropometric and ergonomic data for early childhood has resulted in products uniquely appropriate for young children. PlayDesigns playstructures include Fun Centers, Explorers®, and ToddlerTown™.

**Playworld Systems** is internationally recognized for excellence in design, having won two gold medals in the prestigious International Industrial Design Excellence Awards, a gold medal from *International Design* magazine, and two Early Childhood News Directors' Choice Awards. Playworld Systems is the only company in this industry to be so honored!

**Certifications:** Playworld Systems is proud to be ISO9001 certified.

*Playworld Systems is a founding member of IPEMA and is committed to producing products that meet or exceed ADA and CPSC guidelines, and ASTM, EN, and CSA standards. Our products are also backed by the most comprehensive warranties in the industry, attesting to the high-quality standards of the products, the work force, and the management.*



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