
PLAYGROUND AUDIT GUIDE



The Dirty Dozen Checklist...

Are they hiding in your child's playground?



1. Improper Protective Surfacing

The surface or ground under and around the playground equipment should be soft enough to cushion a fall. Improper surfacing material under playground equipment is the leading cause of playground related injuries. Over seventy percent of all accidents on playgrounds are from children falling. Hard surfaces such as concrete, blacktop, packed earth or grass are not acceptable under play equipment. A fall onto one of these hard surfaces could be life threatening.

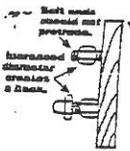
There are many surfaces that offer protection from falls. Acceptable surfaces are hardwood fiber/mulch, sand, and pea gravel. These surfaces must be maintained at a depth of twelve inches, be free of standing water and debris, and not be allowed to become compacted. There are also synthetic or rubber tiles and mats that are appropriate for use under play equipment.

2. Inadequate Fall Zone

A fall zone or use zone is the area under and around the playground equipment where a child might fall. A fall zone should be covered with protective surfacing material and extend a minimum of six feet in all directions from the edge of stationary play equipment such as climbers and chin up bars. The fall zone at the bottom or exit area of a slide should extend a minimum of six feet from the end of the slide for slides four feet or less in height. For slides higher than four feet, take the entrance height of the slide and add four feet to determine how far the surfacing should extend from the end of the slide. Swings require a much greater area for the fall zone. The fall zone should extend two times the height of the pivot or swing hanger in front of and behind the swings seats. The fall zone should also extend six feet to the side of the support structure.

3. Protrusion & Entanglement Hazards

A protrusion hazard is a component or piece of hardware that might be capable of impaling or cutting a child if a child should fall against the hazard. Some protrusions are also capable of catching strings or items of clothing which might be worn around a child's neck. This type of entanglement is especially hazardous because it might result in strangulation. Examples of protrusion and entanglement hazards includes bolt ends that extend more than two thread beyond the face of the nut, hardware configurations that form a hook or leave a gap or space between components and open "S" type hooks. Rungs or handholds that protrude outward from a support structure may be capable of penetrating the eye socket. Special attention should be paid to the area at the top of slides and sliding devices. Ropes should be anchored securely at both ends and not be capable of forming a loop or a noose.



4. Entrapment in Openings

Enclosed openings on playground equipment must be checked for head entrapment hazards. Children often enter openings feet first and attempt to slide through the opening. If the opening is not large enough it may allow the body to pass through the opening and entrap the head. Generally, there should be no openings on playground equipment that measures between three and one half inches and nine inches. Where the ground forms the lower boundary of the opening it is not considered to be hazardous. Pay special attention to openings at the top of a slide, openings between platforms and openings on climbers where the distance between rungs might be less than nine inches.

5. Insufficient Equipment Spacing

Improper spacing between pieces of play equipment can cause overcrowding of a play area which may create several hazards. Fall zones for equipment that is higher than twenty-four inches above the ground cannot overlap. Therefore there should be a minimum of twelve feet in between two play structures. This provides room for children to circulate and prevents the possibility of a child falling off of one structure and striking another structure. Swings and other pieces of moving equipment should be located in an area away from other structures.

6. Trip Hazards

Trip hazards are created by play structure components or items on the playground. Exposed concrete footings, abrupt changes in surface elevations, containment borders, roots, tree stumps and rocks are all common trip hazards that are often found in play environments.

7. Lack of Supervision

The supervision of a playground environment directly relates to the overall safety of the environment. A play area should be designed so that it is easy for a parent or caregiver to observe the children at play. Young children are constantly challenging their own abilities, very often not being able to recognize potential hazards.

It is estimated that over forty percent of all playground injuries are directly related to lack of supervision in some way. Parents must supervise their children in some way on the playground!

8. Age-Inappropriate Activities

Children's developmental needs vary greatly from age two to age twelve. In an effort to provide a challenging and safe play environment for all ages it is important to make sure that the equipment in the playground setting is appropriate for the age of the intended user. Areas for preschool age children should be separate from areas intended for school age children.

9. Lack of Maintenance

In order for playgrounds to remain in "safe" condition a program of systematic, preventive maintenance must be present. There should be no missing, broken or worn-out components. All hardware should be secure. The wood, metal, or plastic should not show signs of fatigue or deterioration. All parts should be stable with no apparent signs of loosening. The surfacing material must also be maintained. Check for signs of vandalism.

10. Pinch, Crush, Shearing, and Sharp Edge Hazards

Components in the play environment should be inspected to make sure that there are no sharp edges or points that could cut skin. Moving components such as suspension bridges, track rides, merry-go rounds, seesaws and some swings should be checked to make sure that there are no moving parts or mechanisms that might crush or pinch a child's finger.

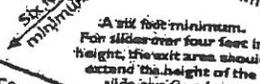
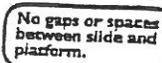
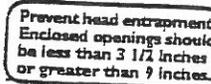
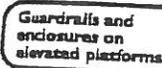
11. Platforms with No Guardrails

Elevated surfaces such as platforms, ramps, and bridgeways should have guardrails that would prevent accidental falls. Preschool age children are more at risk from falls and equipment intended for this age group should have guardrails on elevated surfaces higher than twenty inches. Equipment intended for school-age children should have guardrails on elevated surfaces higher than thirty inches.

12. Equipment Not Recommended for Public Playgrounds

Accidents associated with the following types of equipment have resulted in the Consumer Product Safety Commission recommending that they not be used on public playgrounds:

- * Heavy swings such as animal figure swings & multiple occupancy/glider type swings.
- * Free swinging ropes that may fray or form a loop.
- * Swinging exercise rings and trapeze bars are considered athletic equipment and not recommended for public playgrounds. Overhead hanging rings that have a short amount of chain and are intended for use as a ring trek (generally four to eight rings) are allowed on public playground equipment.



FALL ZONES AND STRANGULATION

Playground Safety Audit

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 1993 ASTM F1487

Slides

- | | |
|---|--|
| <input type="checkbox"/> Straight
<input type="checkbox"/> Spiral
<input type="checkbox"/> Tube | <input type="checkbox"/> Embankment
<input type="checkbox"/> Half-Tube
<input type="checkbox"/> Roller |
|---|--|

Layout

- * Metal slides to face North or in a shaded area.(CPSC Guidelines)
- * Located in uncongested area.

Stability

- * Footings are stable and buried below ground level or protected by protective surfacing

Corrosion

- * No corrosion or visible rotting

Slide Access

- * Rung Ladder: Slope (75-90 degrees)

See attached ladder chart for tread width, tread depth and vertical rise.

- * Step Ladder: Slope (50-75 degrees)

See attached ladder chart for tread width, tread depth and vertical rise.

- * Stairway: Slope (less than 50 degrees)

See attached ladder chart for tread width, tread depth and vertical rise.

- * Ladder rung diameter: .95 - 1.55"

- * Handrail diameter: .95 - 1.55"

- * Continuous handrails provided with Hand-rail height between 22" and 38".

Condition	Priority	Recommendations

Playground Safety Audit

Slides

Slide Platform

- * Minimum length of 22".
- * Width equal or greater than width of slide.
- * Guardrails or protective barriers to surround platform. (protective barrier for platforms above 4' high).
- * No spaces or gaps between platform and start of sliding surface.
- * Handholds provided at slide entrance.
- * Means provided to channel user into sitting position. (Guardrail or hood that does not encourage climbing).

Sliding Surface

- * Average incline of 50 degrees.
- * Flat open chutes to have minimum side height of 4" extending full length of slide.
- * Sides to be an integral part of chute without gaps between side and sliding surface.
- * Cross section of 1/2 tube slide side height no less than half the width of slide.

Exit Region

- * All slides to have an exit region.
- * 11" minimum exit region length.
- * Slides no more than 4 feet high to have an exit region height of 11".
- * Slides over 4 feet high to have an exit region between 7" and 15" above protective surface.
- * Slide exit edges to be rounded or curved.
- * Radius of exit region curvature shall be 30" or greater.

Embankment Slide

- * Same as straight slide (where applicable)
- * Means provided to prevent use of skateboards and bicycles. (CPSC Guidelines)

Spiral Slides

- * Same as straight slides
- * Only short spiral slides for 2 - 5 year old children. (CPSC Guidelines)
- * Clear area, 21" wide, for entire length of slide, from inside face of sidewall to outer edge of slide.

Tube Slides

- * Same as straight slides.
- * Min. internal diameter not less than 23".
- * Top surface of tube treated to prevent sliding on top of tube. (CPSC Guidelines)

Condition	Priority	Recommendations

Playground Safety Audit

Slides

Hardware

- * All fasteners to be tight.
- * Fasteners, connecting or covering devices not removable without use of tools.

Surfacing

- * Adequate drainage provided
- * Depth of surfacing material agrees with critical height of equipment. (Use CPSC Chart or matting manufacturer's information)

Use Zone

- * 6' in all directions from perimeter of equipment. Exit region requires special attention.
- * Use zone at the exit of the slide to extend a minimum of 6' from the end of the slide or for a minimum distance of H + 4 feet which ever is greater up to a maximum of 14 ft. H is the platform height and the 4 feet measurement is made from a point on the slide chute where the gradient has been reduced to 5 degrees from the horizontal.

Condition	Priority	Recommendations

Comments:

Action Taken:

Date: _____

By: _____

Supervisor: _____

Playground Safety Audit

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
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- 3). Slight injury or may not have caused injury but does not meet 1993 ASTM F1487

Stairways and Ladders

- | | |
|---|--|
| <input type="checkbox"/> Rung Ladder
<input type="checkbox"/> Step Ladder
<input type="checkbox"/> Stairway | <input type="checkbox"/> Ramps (Not for Disabled)
<input type="checkbox"/> Other: _____

_____ |
|---|--|

Stability

* Footings are stable and buried below ground level or covered by protective surfacing.

Corrosion

• No corrosion or visible rotting.

- * 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, stepping surface for final access shall not be above designated play surface it serves.

Rungs and handgripping Components

* Rungs to be a diameter between .95 and 1.55 inches.

Handrails

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

Playground Safety Audit

Stairways and Ladders

Slope Requirements

- * Rung Ladder: Slope (75-90 degrees)
See attached ladder chart for tread width, tread depth and vertical rise.
- * Step Ladder: Slope (50-75 degrees)
See attached ladder chart for tread width, tread depth and vertical rise.
- * Stairway: Slope (less than 50 degrees)
See attached ladder chart for tread width, tread depth and vertical rise.

Handrail Height

- * 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.
- * Handrail diameter should be between .95 and 1.55 inches.
- * Any transition from an access to a platform must have handrails or hand holds.

Sharp Point, Corners & Edges

- * There are no sharp points, corners or edges. Wood to be smooth and no splinters.

Protrusions

- * There are no protrusions. Protrusions to be tested.

Entrapment Angles

- * All angles to be greater than 55 degrees, unless lower leg is horizontal or projects downwards.

Entrapment - Head & Body

- * Interior opposing surfaces to be less than 3-1/2" or greater than 9".
- * Openings to be tested.

Hardware

- * All fasteners to be tight.
- * Fasteners, connecting or covering devices not removable without use of tools.

Condition	Priority	Recommendations

Playground Safety Audit

Stairways and Ladders

Surfacing

- * Adequate drainage provided
- * Depth of surfacing material agrees with critical height of equipment. (Use CPSC Chart or matting manufacturer's information)

Use Zone

- * 6' in all directions from perimeter of equipment.

Spiral Stairway

- * Shall meet all general requirements for access.
- * Depth of tread outer edge should be >7" for 2-5 years and >8" 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.

Condition	Priority	Recommendations

Comments:

Action Taken:

Date: _____

By: _____

Supervisor: _____

Playground Safety Audit

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
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Rotating and rocking Equipment

- | | |
|---|--|
| <input type="checkbox"/> Merry-go-rounds
<input type="checkbox"/> SeeSaws
<input type="checkbox"/> Spring Rockers | <input type="checkbox"/> Trampolines
<input type="checkbox"/> Others: _____

_____ |
|---|--|

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" diameter rod to pass through the surface.
- * A means to limit the peripheral speed of rotation to a maximum of 13 ft/sec.
- * No oscillatory (up and down) motion.
- * Maximum height of platform - 14" above protective surface (underside no less than 9" above surface). Platforms less than 20" diameter exempt.
- * Handgrips shall be provided or platform should be tub or dish-like.

Condition	Priority	Recommendations

Playground Safety Audit

Rotating and Rocking Equipment

Seesaws

- * Not recommended for 2-5 year old children unless they are equipped with a spring centering device. (CPSC Guidelines)
- * 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.
- * Handholds to be provided at each seating position for gripping with both hands and should not turn when grasped.
- * Handgrips for two hands minimum length of 6", should not protrude beyond seat sides.
- * Diameter of handgrips to be between .95-1.55".
- * Handholds are not to protrude beyond the side of the seat.
- * Footrests are not to be provided on fulcrum seesaws unless they are equipped with a spring centering device.
- * Maximum attainable seat height - 5' above the surface.

Spring Rocking Equipment

- * Seat design to minimize the likelihood of the rocker being used by more than the intended number of users.
- * Each seating position to be equipped with handgrips and footrests.
- * Diameter of handgrips to be between .95-1.55".
- * The spring should not pinch children's hands or feet between coils or between the spring and any part of the rocker.
- * Handgrips for one hand - minimum length - 3"
- Handgrips for two hands - minimum length - 6"
- Footrests- minimum width of 3.5"
- * Installed height of seat (unloaded and at rest) not less than 14" nor more than 28" above platform surface.

Trampolines

- * Not recommended for use on public playgrounds. (CPSC Guidelines)

Sharp Point, Corners & Edges

- * There are no sharp points, corners or edges. Wood to be smooth and no splinters.

Protrusions

- * There are no protrusions. Protrusions to be tested.

Condition	Priority	Recommendations

Playground Safety Audit

Rotating and Rocking Equipment

Entrapment Angles

* All angles to be greater than 55 degrees, unless lower leg is horizontal or projects downwards.

Entrapment - Head & Body

* Interior opposing surfaces to be less than 3-1/2" or greater than 9".
 * Openings to be tested.

Hardware

* All fasteners to be tight.
 * Fasteners, connecting or covering devices not removable without use of tools.

Surfacing

* Adequate drainage provided
 * Depth of surfacing material agrees with critical height of equipment. (Use CPSC Chart or matting manufacturer's information)

Use Zone

* Merry-Go-Rounds: Use zone to extend 6 feet beyond the perimeter of the platform.
 * SeeSaws: Use zone to extend a minimum of 6 feet in all directions from the perimeter of the equipment.
 * 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" when intended for sitting, may share the same use zone.
 * When intended for standing, use zone to be no less than 7 feet in all directions, from at rest perimeter.

Condition	Priority	Recommendations

Comments:

Action Taken:

Date: _____ Supervisor: _____
 By: _____

Playground Safety Audit

Swings

Playground: _____ Materials: _____
 Location: _____ Surface: _____
 Inspected By: _____ Ages of Intended Users: _____
 Location of Piece: _____ Weather: _____
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Priority

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Swings

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

Location

* Swings to be located away from other equipment and activities.

Stability

* Footings stable and buried below ground level or covered by protective surfacing.

Corrosion and Wear

* Rotting, corrosion or visible wear on chain and "S" hooks.

Structure Design

- * 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.

Seat Design & Placement

- * 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".
- * 24" minimum clearance between seats
- * 30" minimum clearance between seat and structure, measured 5' above protective surface.
- * All S-hooks to be closed completely.

Clearances

* Vertical distance at least 12" between underside of seat and protective surface.

Condition	Priority	Recommendations

Playground Safety Audit

Swings

Hardware

- * All fasteners to be tight.
- * Fasteners, connecting or covering devices not removable without use of tools.
- * Hangers shall have bearings, bushings or other means of reducing friction and wear.

Surfacing

- * Adequate drainage provided
- * Depth of surfacing material agrees with critical height of equipment. (Use CPSC Chart or matting manufacturer's information)

Use Zone

- * 6' from side perimeters of equipment.
- * Single Axis Swings: Minimum distance of 2 times the height of the pivot point (applies to both in front of behind pivot point.)
- * Multi Axis Tire Swing: Minimum distance in all directions of 6' + length of supporting member.

Condition	Priority	Recommendations

Comments:

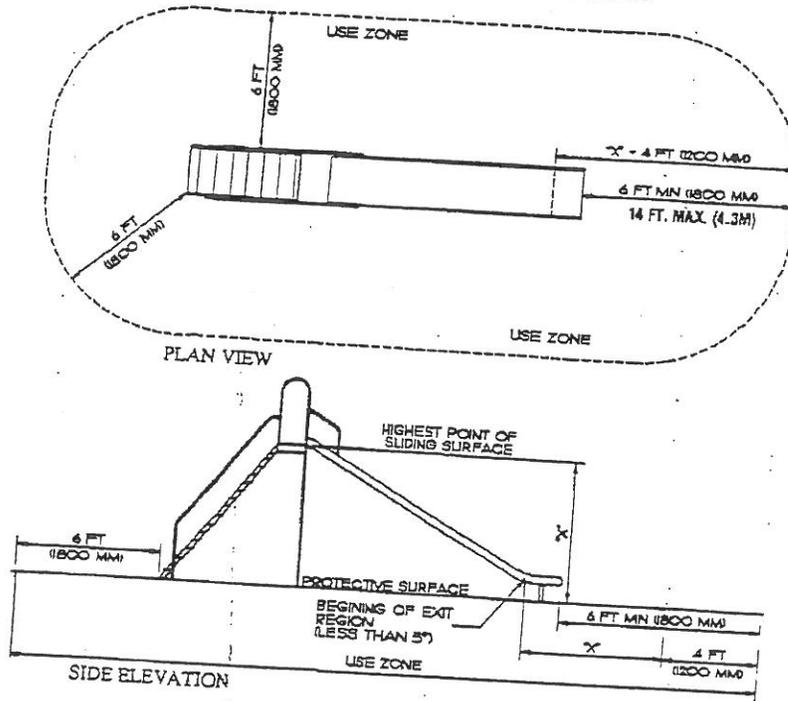
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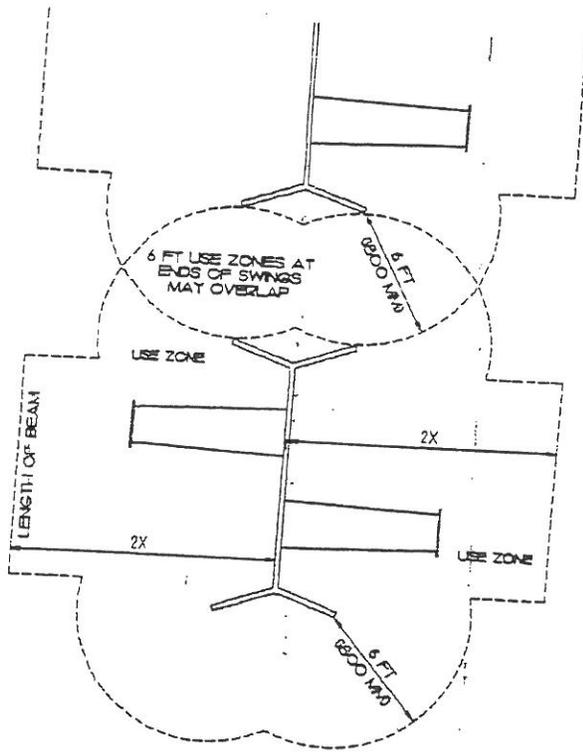
Supervisor: _____

Playground Safety Audit

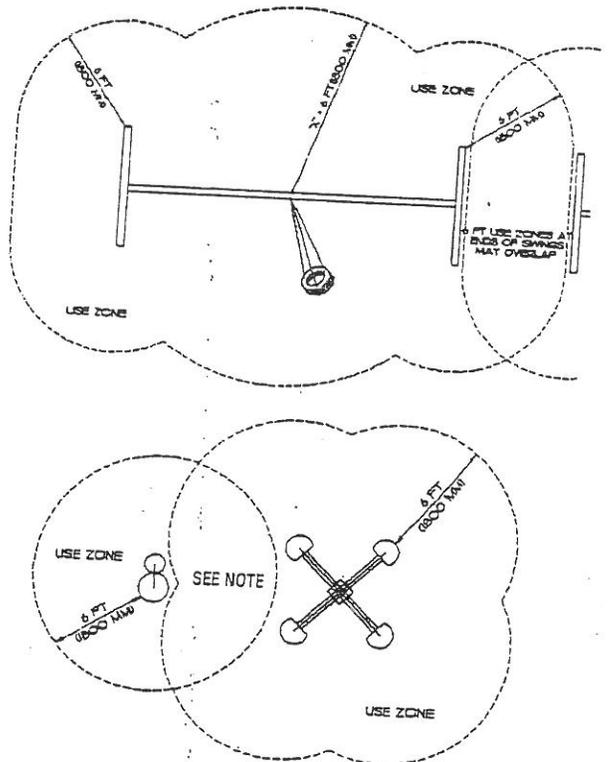
Fall Zone for Slides



Use Zone for Single Axis Tire Swings



Use Zone for Multi Axis Tire Swings



Foot Note: Information reproduced for the 1991 publication of the ASTM/ F1487-93. Standard Consumer Safety Performance specification for Playground Equipment for public use.

Playground Safety Audit

Platforms

Playground: _____ Materials: _____
 Location: _____ Surface: _____
 Inspected By: _____ Ages of Intended Users: _____
 Location of Piece: _____ Weather: _____
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Priority:

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Design

- * Platforms to be within +2 degrees of a horizontal plane.
- * Openings provided to allow for drainage.

Guardrail

- * Elevated surface (2-5 year olds) more than 20" high to have guardrail.
- * Top surface of guardrail (2-5 years old) to be 29" high and bottom surface no more than 23" above platform.
- * Elevated surface (5-12 years old) more than 30" high to have guardrail.
- * Top surface of guardrail (5-12 years old) to be 38" high and bottom surface no more than 26" above platform.
- * Guardrails shall completely surround elevated surface except for necessary entrances and exits.

Protective Barrier

- * Elevated surface (2-5 years old) more than 30" high to have protective barrier.
- * Top surface of protective barrier (2-5 years old) to be 29" high and non-climbable.
- * Elevated surface (5-12 years old) more than 48" high to have protective barrier.
- * Top surface of protective barrier (5-12 years old) to be 38" high and non-climbable.
- * Protective barriers shall completely surround elevated surface except for necessary entrances and exits.

Stepped Platforms

- * The maximum difference in height between stepped platforms should be:
 2 - 5 year olds: 12 inches
 5 -12 year olds: 18 inches
- * If the space exceeds 9" and the height of the lower platform exceeds 30" for 2-5 year olds or 48" for 5-12 year olds, infill to be used to reduce space to less than 3-1/2".

Condition	Priority	Recommendations

Playground Safety Audit

Platforms

Sharp Point, Corners & Edges

* There are no sharp points, corners or edges. Wood to be smooth and no splinters.

Protrusions

* There are no protrusions. Protrusions to be tested.

Entrapment Angles

* All angles to be greater than 55 degrees, unless lower leg is horizontal or projects downwards.

Entrapment - Head & Body

* Interior opposing surfaces to be less than 3-1/2" or greater than 9".

* Openings to be tested.

Hardware

* All fasteners to be tight.

* Fasteners, connecting or covering devices not removable without use of tools.

Condition	Priority	Recommendations

Comments:

Action Taken:

Date: _____
 By: _____
 Supervisor: _____

