



PLAYGROUND SAFETY



What We Will Cover Today...

- The Standards
- The Dirty Dozen

The Group

- National Recreation and Park Association
- National Playground Safety Institute
- Certified Playground Safety Inspector (CPSI)

The Standards

- American Society for Testing and Materials International (ASTM)
- U.S. Consumer Product Safety Commission (CPSC)
- Slightly different for age of child (Pre-school and School Age)

- International Playground Equipment Manufacturers Association (IPEMA)

The Dirty Dozen: The Top 12 Safety Hazards in America's Playgrounds

1. Improper Protective Surfacing
2. Inadequate Use Zone
3. Protrusion and Entanglement Hazards
4. Entrapment in Openings
5. Insufficient Equipment Spacing
6. Trip Hazards
7. Lack of Supervision
8. Age-Inappropriate Activities
9. Lack of Maintenance
10. Crush, Shearing and Sharp Edge Hazards
11. Platforms with No Guardrails
12. Equipment Not Recommended for Public Playgrounds

Improper Protective Surfacing

The surface or ground under/around the playground equipment should be soft enough to cushion a fall. A fall onto one of these hard surfaces could be life threatening and there are many surfaces that offer protection from falls.

Acceptable Surfaces:

- Engineered Wood Fiber
- Wood Chips
- Sand/Pea Gravel
- Synthetic/Rubber Tiles
- Shredded Rubber
- Mats
- Poured-in-place Rubber

Most loose-fill surfacing must be maintained at a depth of 12 inches and be free of standing water and debris.

Unacceptable Surfaces:

- Concrete
- Blacktop
- Packed Earth
- Grass

- Improper surfacing material under playground equipment is the leading cause of playground-related injuries. Over 79% of all accidents on playgrounds are from falling children.

Inadequate Use Zone

A use zone is the area under and around equipment where a child might fall. A use 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.

Slide Use Zone

- For slides six feet or less in height, the use zone at the bottom of the exit area should extend a minimum of six feet from the end of the slide.
- For slides between six feet and eight feet high, the use zone at the exit of the slide is equal to the height of the platform or entrance to the slide.
- The maximum exit use zone, regardless of height, is eight feet.

School-Age Belt Swing Use Zone

- Swings require a much greater area for the use zone
- The use zone should extend two times the height of the pivot or swing hanger in front of and behind the swing's seat
- The use zone should also extend six feet to the side of the support structure

Tot Swing Use Zone

- A fully enclosed tot swing requires less of a use zone than school-age swings
- Measure the vertical distance from the bottom of the seat to the pivot point or swing hanger and multiply by two for the use zone in front and back of the swings

Protrusion and Entanglement Hazards

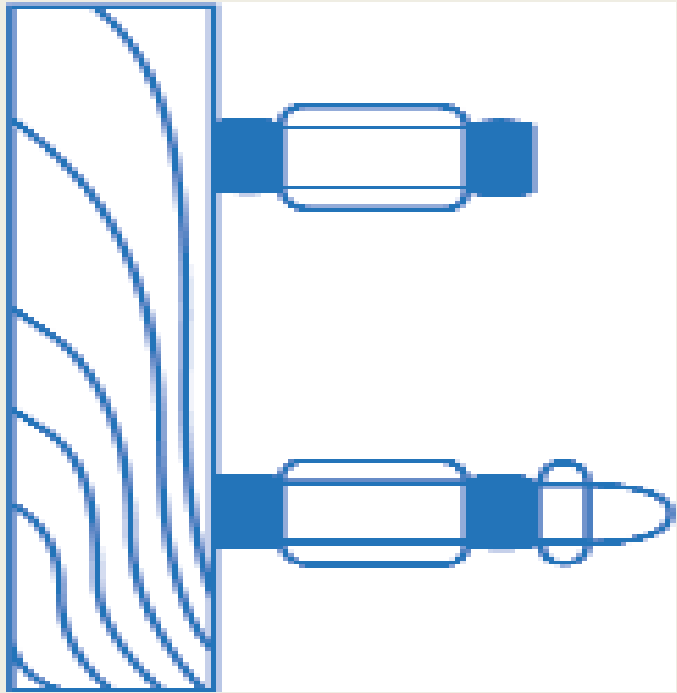
A protrusion hazard is a component or piece of hardware that is capable of impaling or cutting a child, if a child should fall against the hazard.

Some protrusions are also capable of catching strings or items of clothing 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 include:

- **Bolt ends that extend more than two threads beyond the face of the nut**
- **Hardware configurations that form a hook or leave a gap or space between components**
- **Open "S" type hooks**
- **Rungs of handholds that protrude outward from a support structure may be capable of penetrating an eye socket**

Also, special attention should be paid to the area at the top of slides and sliding devices. Protruding hardware and some gaps may act as a hook and catch clothing. Ropes should be anchored securely at both ends and not be capable of forming a loop or a noose.







Entrapment in Openings

Enclosed opening on 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 but entrap the head.

Generally, there should be no openings on equipment that measure between 3.5 to 9 inches. Where the lower boundary of the opening is formed by the protective surfacing, the opening is not considered to be hazardous.

Pay special attention to:

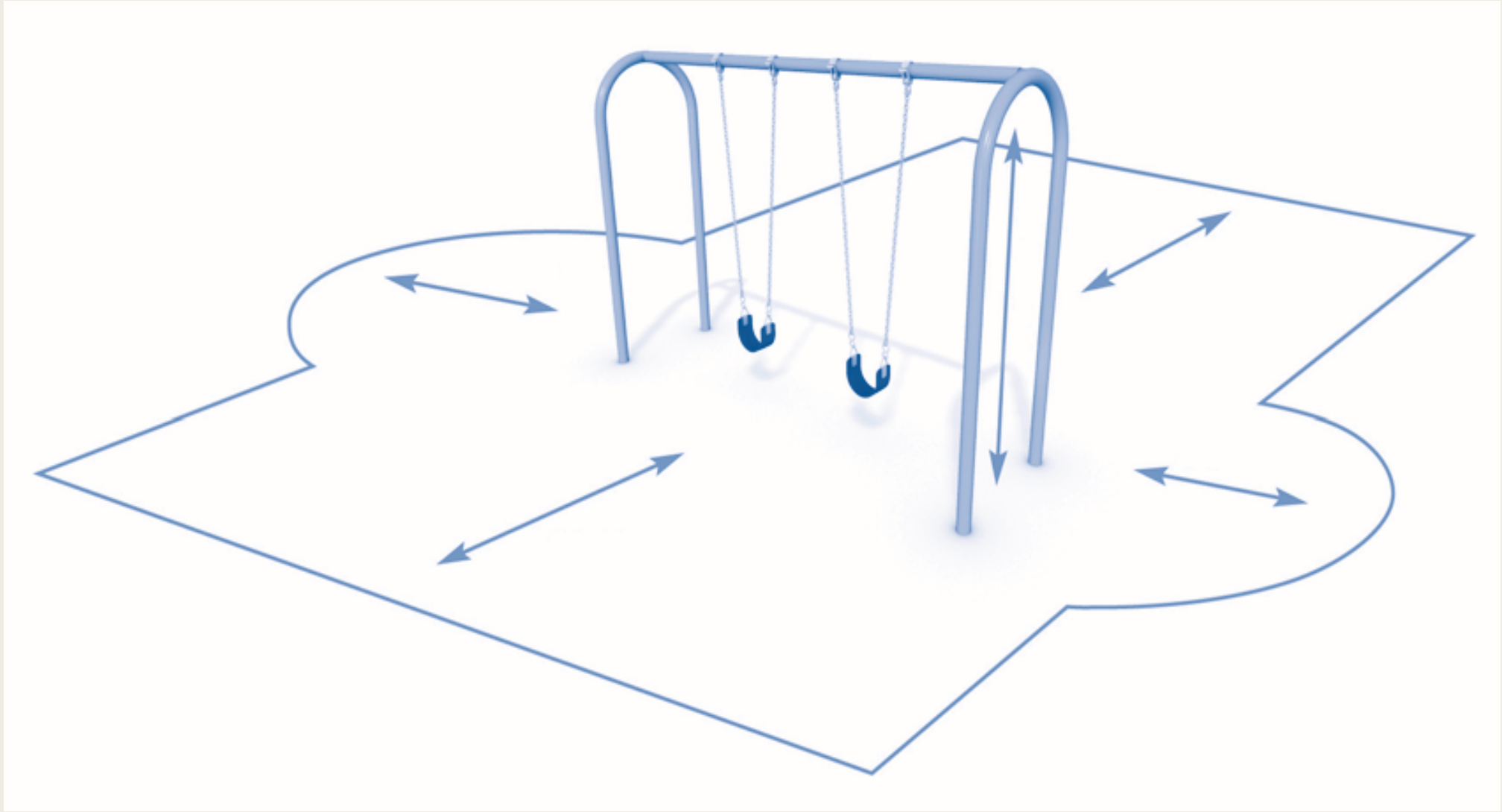
- Openings at the top of a slide
- Openings between platforms
- Openings on climbers where distance between rungs might be less than nine inches.
- Partially bounded openings such as seen on the top of a picket fence.



Insufficient Equipment Spacing

Improper spacing between pieces of play equipment can cause overcrowding of a play area, resulting in unsafe play conditions. Each item of play equipment has a use zone around it where protective surfacing material is applied. These use zones may overlap for certain types of equipment.

- Equipment less than 30 inches in height may overlap use zones with six feet between.
- Equipment higher than 30 inches must have nine feet in between each structure.
- The to-fro area of swings, the exit area of slides, standing rocking equipment and merry-go-rounds may not overlap use zones. This provides room for children to circulate and prevents the possibility of a child falling off of one structure and striking another.
- Swings and merry-go-rounds should be located near the boundary of the playground



Trip Hazards

Trip hazards are created by play structure components or items on the playground.

Common trip hazards often found in play environments include:

- Exposed concrete footings
- Abrupt changes in surface elevations
- Tree roots
- Tree stumps
- Rocks



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, often not being able to recognize potential hazards.

Parents must supervise their children at all times on the playground.

It is estimated that over 40 percent of all playground injuries are directly related to lack of supervision.

Age-Inappropriate Activities

Children's developmental needs vary greatly between the ages of 2 and 12. 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.

The CPSC does not recommend the following for preschool users:

- Free-standing arch climbers
- Free-standing flexible climbers
- Chain and cable walks
- Fulcrum seesaws
- Log rolls
- Track rides
- Vertical sliding poles

Lack of Maintenance

In order for playgrounds to remain in “safe” condition, a program of systematic, preventative 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
- Surfacing material must be maintained
- Check for signs of vandalism

Crush, Shearing and Sharp Edge Hazards

Components in playgrounds should be inspected to make sure

- There are no sharp edges or points that could penetrate the skin.

Moving components (suspension track rides, merry-go-rounds, seesaws, swings) should be checked to ensure there are no moving parts or mechanisms that might crush a child's finger.







Platforms with No Guardrails

Elevated surfaces such as platforms, ramps, and bridges should have guardrails or barriers to help prevent accidental falls.

Preschool age children are more at risk for falls; therefore equipment intended for this age group should have:

- Guardrails on elevated platforms higher than 20 inches
- Protective barriers on platforms higher than 30 inches

Equipment intended for school-age children should have:

- Guardrails on elevated platforms higher than 30 inches
- Protective barriers on platforms higher than 48 inches

Equipment Not Recommended for Public Playgrounds

Accidents associated with the following types of equipment have resulted in the U.S. Consumer Product and 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

