RISK CONTROL SERVICES

PLAYGROUND SAFETY

While playgrounds provide children with the opportunity to exercise and socialize, they can also be associated with liability issues when improperly installed and maintained.

Emergency departments in the U.S. treat more than 200,000 children ages 14 and younger each year. A U.S. Consumer Product Safety Commission (CPSC) analysis of 3,014 playground injuries reported between 2009 and 2014 shows 63 percent were related to equipment (breakage, tip over, poor design, or assembly), while 17 percent were due to falls (from, into, or onto equipment).

During the study period, CPSC investigated 34 fatal incidents—asphyxiation was the most common cause of death, following by neck and head injuries.

Careful installation, maintenance, and policies governing playground use go a long way toward reducing injuries. Your organization must concentrate on addressing risks and providing the safest experience possible; one that complies with local safety regulations and CPSC guidelines.

Resident-owned playgrounds

Resident-owned playgrounds are a liability because they don't fall under your organization's maintenance purview. You should prohibit resident-owned playgrounds on your property.

If you choose to allow them, create a strict policy outlining resident maintenance responsibilities. Document all resident-owned playgrounds and inspect each during regular unit inspections. Consider including language in your policy that says your organization has the right to remove a resident-owned playground if necessary and is not liable for any issues or injuries from the playground. Your policy should prohibit resident-owned trampolines, as they are a significant liability risk.

Selecting equipment

When selecting playground equipment, it's essential to know the age range of the children who will use the playground. Children at different ages and stages of development have different needs and abilities. Refer to the table below for CPSC examples of age appropriate equipment.

EXAMPLES OF AGE-APPROPRIATE EQUIPMENT

Toddler: Ages 6–23 months

- Climbing features under 32 inches high
- Ramps
- Single-file step ladders
- Slides
- Spiral slides less than 360°
- Spring rockers
- Stairways
- Swings with full bucket seats

Preschool: Ages 2–5 years

- Merry-go-rounds
- Ramps
- Rung ladders
- Single-file step ladders
- Slides
- Spiral slides up to 360°
- Spring rockers
- Stairways
- Swings: belt, full bucket seats, and rotating tire

Grade School: Ages 5–12 years

- Arch climbers
- Chain or cable walks
- Free standing climbing events with flexible parts
- Fulcrum seesaws
- Ladders: horizontal, rung, and step
- Overhead rings
- Merry-go-rounds
- Ramps
- Ring treks
- Slides
- Spiral slides more than one 360° turn
- Stairways
- Swings: belt and rotating tire
- Track rides
- Vertical sliding poles

Equipment not recommended

According to CPSC guidelines, you should avoid the following types of equipment in public playgrounds due to increased risk of injury:

- Trampolines
- Swinging gates
- Climbing ropes not secured at both ends
- Heavy metal swings (e.g., animal figures)
- Multiple occupancy swings
- Rope swings

Surfacing

You shouldn't install a playground without protective surfacing of some type. A fall onto a shock-absorbing surface is less likely to cause a serious head injury than a fall onto a hard surface such as concrete or asphalt, which should never be directly under playground equipment. You should avoid grass and dirt surfacing, per CPSC guidelines, as wear and weathering can reduce or eliminate their shock effectiveness.

Engineered wood fiber (EWF) and rubber mulch products are designed for playground safety surfaces under and around playground equipment. Loose-fill materials such as sand, pea gravel, wood chips, and shredded/recycled rubber mulch are also CPSC recommended surfacing materials.

TIPS TO CONSIDER WHEN SELECTING LOOSE-FILL MATERIALS:

1. Loose-fill materials can compress at least 25 percent over time due to use and weathering.

2. Surfacing requires frequent maintenance to ensure levels do not drop.

3. The playground perimeter should help act as a barrier to contain loose-fill materials.

4. Drainage is essential to maintaining loose-fill surfacing, preventing material compaction and decomposition.

5. Avoid loose-fill materials for playgrounds intended for toddlers.

Maintaining loose-fill surfacing

Inspect your playground(s) regularly to ensure surfacing has not displaced significantly, particularly in high-traffic areas (e.g., under swings or at the bottom of slides). Rake material back into place and replace material as necessary to maintain a constant surfacing depth throughout the playground.

RECOMMENDED SURFACING	INAPPROPRIATE SURFACING
• Rubberized mats/tiles • Pea gravel • Shredded rubber mulch • Engineered wood fiber (EWF) • Wood chips or wood mulch • Sand	• Asphalt • Concrete • Dirt • Grass • CCA treated wood mulch

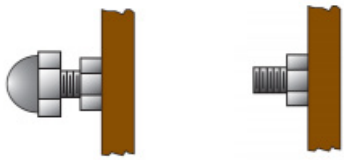
Source: CPSC Playground Safety Handbook

Playground hazards

Crush and shear points

Crush and shear points are caused by parts moving relative to each other or to a fixed part during a normal use cycle, such as a seesaw. Don't let children use equipment that can crush or shear limbs.

Figure 1 Figure 2



Source: CPSC Playground Safety Handbook

Entanglement and impalement

Projections on playground equipment should not be able to entangle clothing—this can lead to strangulation. They should also not be able to impale a child. Figure 1 on the following page demonstrates an entanglement hazard where a clothing item, such as a jacket's drawstring, can become entangled in the piece of equipment. Figure 2 shows a hazardous projection that can lead to impalement.

To avoid these risks:

- The diameter of the projection should not increase in the direction away from the surrounding surface toward the exposed end.
- Bolts should not expose more than two threads beyond the end of the nut.
- All hooks should be closed (a hook is considered closed if there is no space greater than 0.04 inches, about the thickness of a dime).

Strings and ropes

Drawstrings on the hoods of jackets, sweatshirts, and other upper body clothing can become entangled in playground equipment and cause death by strangulation.

- Children should not wear jewelry, jackets, or sweatshirts with drawstring hoods, mittens connected by strings through the arms, or other upper body clothing with drawstrings.
- Remove any ropes, dog leashes, or similar objects attached to playground equipment. Children can become entangled in them and strangle to death.
- Avoid equipment with unsecured ropes at both ends.

Entrapments

Head entrapment is a serious concern on playgrounds since it may lead to strangulation and death. Younger children may not have the intellectual ability or motor skills to reverse the process that caused their head to become trapped, especially if they're scared or panicked. Parts should not form openings that could trap a child's head.

A child's head can become entrapped if the child enters an opening feet first or head first:

- Head-first entrapment generally occurs when a child places their head through an opening and then turns their head in a different direction so they can't get out.
- Feet-first entrapment often involves a child sitting or lying down and sliding their feet into an opening that is large enough for their body to go through, but not their head.

Children should not wear bicycle helmets while on playground equipment to prevent becoming entrapped in spaces that might not normally be considered an entrapment risk.

Sharp points, corners, and edges

Sharp points, corners, and edges on any part of the playground may cut or puncture a child's skin. To avoid injury from these risks:

- Cover exposed open ends of all tubing not resting on the ground with caps or plugs that can't be removed without the use of tools.
- Ensure wood parts are smooth and free from splinters.
- All corners—metal and wood—should be rounded.
- All metal edges should be rolled or have rounded capping.
- There should be no sharp edges on slides. Pay special attention to the metal edges of slides.
- Conduct frequent inspections to help prevent injuries caused by splintered wood, sharp points, corners, or edges that may develop due to wear and tear on equipment.

Tripping hazards

Playgrounds should be free of tripping hazards, such as anchoring devices for playground equipment and containment walls for loose-fill surfacing materials.

Children may also be injured if they run into or trip over suspended components (e.g., cables, wires, ropes, or other flexible parts) connected from one piece of the playground equipment to another or hanging to the ground.

- Suspended components should be located away from high traffic areas and be brightly colored or in contrast with the surrounding equipment and surfacing.
- All anchoring devices for playground equipment, such as concrete footings or horizontal bars at the bottom of flexible climbers, should be installed below ground level.
- Surfacing containment walls should be highly visible, and any change of elevation should be noticeable.

Maintaining the playground

Inadequate maintenance of equipment has resulted in injuries and deaths on playgrounds. The benefits of a playground maintenance program include:

- reduced playground injuries;
- a positive public image;
- acceptable levels of risk exposure; and
- defense against potential liability and negligence claims.

Maintenance inspections

Always follow the equipment manufacturer's maintenance instructions and recommended inspection schedules. Use this information to develop a comprehensive maintenance program for your playground(s).

Inspect all playgrounds and equipment for excessive wear, deterioration, and any potential hazards. Some manufacturers supply checklists for general or detailed inspections with their maintenance instructions. A sample inspection checklist can also be downloaded here and customized to your organization.

Detailed inspections should give special attention to moving parts and other parts that you can expect to wear. Personnel familiar with the playground should carry out maintenance inspections in a systematic manner.

Fix any problems found during maintenance inspections immediately, following the manufacturer's instructions. Close the affected area or entire playground until you resolve the issue.

Posting rules

Develop and post playground rules to provide clear expectations and guidelines on the proper use of your equipment. Posted rules are also easier to enforce. The following are suggested rules to include along with any of your organization's custom rules:

- Hours of operation
- Parental supervision guidelines
- User age range by equipment type
- No running, pushing, shoving, or rough play
- No littering
- Appropriate footwear must be worn at all times
- No glass or sharp objects in the play area
- Trespassing and loitering prohibited
- No weapons or drugs
- Report any damage or defect immediately

Fencing and sitting areas

A fence can help prevent children from entering hazardous areas like a parking lot or public roadway by presenting a physical barrier.

Only install a fence made of solid material (e.g., chain link, PVC, iron, or smooth wood). Fencing should be at least 4 feet high in all areas.

Providing benches or tables to serve as seating for adults or parents increases the likelihood of continued supervision of the children using your playground, according to CSPC guidelines. These sitting areas should be located in a shaded area if possible so children can rest and avoid overheating.