



Safe Playgrounds Reducing the Risk

M A R K E L I N S U R A N C E C O M P A N Y



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Foreword

Growing children are avid explorers, indoors and out. Perfecting new skills such as balancing and running requires intense concentration and repeated practice. Children thrive as they test their physical prowess and exercise their imaginations. They create delightful challenges for themselves and each other with every new day.

Instructors and families alike want to create appealing play spaces for our growing children — and at the same time we want to minimize the risk of childhood injury. We all are aware that every playground becomes worn from repeated use. Some equipment may be poorly designed or no longer meets today's standards. All play areas and equipment can be damaged by weather or misuse. Nearly all common play injuries are preventable.

New information about playground safety, coupled with increased concern about liability issues, makes it necessary for adults to attend constantly to the safety of the places where children play. State and Federal governments have established more stringent standards for public playgrounds in order to improve their safety and accessibility for children.

Your staff or community committee can immediately use the practical information shared here to organize and inform

your playground safety efforts. All participants in this ongoing process, including manufacturers and the media, can undergird your efforts if you share a basic understanding that playground safety requires a delicate balance of five factors:

- Supervision - Adequate number of attentive adults aware of the injury-causing factors on the playground and of the techniques of channeling children into safer play patterns.
- Equipment - safe opportunities for children to extend themselves, play together, and practice new skills
- Surface - cushioning that protects a falling child
- Design - manage space to direct traffic and allow movement
- Maintenance - regular attention to keep the area safe

When any one of these factors fails to receive our sufficient and continuing watchfulness, children are placed at risk of injury or even death. Markel Insurance Company offers this succinct guide to help you prevent injury and reduce risks. When all of us who are invested in the future work together, we make it possible for children to have joyous and safe learning experiences, indoors and on their playgrounds.

*Janet Brown McCracken
Early Childhood Education Consultant*

Safe Playgrounds— Reducing the Risk

A report by the National Safety Council indicates that each year more than 200,000 children visit hospital emergency rooms because of playground injuries. Approximately 15 children die each year because of playground injuries.

Additional information from the National SAFE KIDS Campaign reports that it is estimated that one-third of playground equipment-related deaths and 70 percent of playground equipment-related injuries occur on public playgrounds. More than 70 percent of playground-equipment related injuries involve falls to the surface, and 9 percent involve falls onto equipment. Experts say that 85% of these accidents are preventable.

While falls account for a majority of the playground equipment-related injuries, other injuries and fatalities have been caused by impact with moving equipment, structural failure, impact with moving swings, clothing entanglement, ropes tied to or caught on equipment, and head entrapments. Injuries occur from all of the above plus protrusions, sharp edges, pinch points, and hot surfaces.

Two documents are used to evaluate playgrounds. Both are voluntary guidelines. The American Society of Testing and Materials (ASTM) Standard F1487 (*Consumer Safety Performance Specification for Playground Equipment for Public Use*) was written by a committee of playground equipment manufacturers, playground design and construction engineers, and a variety of other people interested in children's safety. This consumer safety performance specification establishes nationally recognized safety and performance standards for public playground equipment. Its purpose is to reduce life-threatening and debilitating injuries. The Consumer Product Safety Commission (CPSC) *Handbook for Public Playground Safety* is a governmental publication and is used mostly by consumers. The CPSC created its playground safety guidelines as a detailed working blueprint to help local communities, schools, day care centers, corporations, and other groups build safe playgrounds. It includes technical safety guidelines for designing, constructing, operating, and maintaining public playgrounds.

General Safety Hazards

After you read this booklet, look at your playground again and check for hazards. Some of the most common problems fall under the following categories:

Age Group Appropriate

Business owners and parents should always keep in mind how important the safety of children really is. Safe play area settings aid in developing physical skills and intellectual experiences. Through “safe” play, children learn how to make decisions and take risks — in a controlled environment that, hopefully, is free of hazards.

Sometimes we forget the physical size and development level of the children who will be using the playground. When equipment is too high it challenges children to climb beyond their abilities and accidents occur. An example would be a 10-foot slide. A much safer slide would come off a 6-foot high deck.

Playground areas should be divided into three main groups according to children’s ages: infant (6–23 months old), preschool (ages 2-5), and school-age (ages 5-12). If you are planning a new playground or renovating an existing playground, make sure to select appropriate equipment for each age group.

Do not put visual obstructions between the separate play areas. This will hamper your ability to supervise the play areas appropriately.

If you use off-site playgrounds, check the play area and confirm it has group-specific play areas. If it doesn’t, contact your local parks and recreation department and request they establish them.

Major Equipment Concerns

Three swings in a bay. The spaces between swing posts are called bays. When there are more than two swings in a bay, the middle swing causes accidents. A child leaving

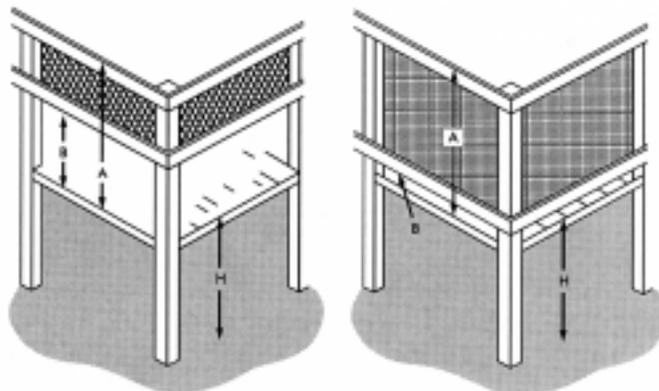


If there are more than two swings in a bay, remove the middle swing(s).

the middle swing or running to get into the middle swing is oblivious to the children swinging on either side, and a collision can happen. To prevent accidents, remove the middle swing.

High decks or platforms that do not have the right type of safety guardrails or barriers lead to fall accidents. Children under 5 are more at risk from this type of fall than older children. Equipment intended for toddlers should have barriers on all elevated walking surfaces above 18 inches.

Guardrails and Barriers



Guardrails should be designed to prevent falls off the platform. They are not recommended on equipment used by toddlers.

| | Guardrail | Barrier |
|---|-----------|---------|
| Protects against accidental falls from platform | Yes | Yes |
| Discourages climbing over | No | Yes |
| Protects against climbing through | No | Yes |

Toddlers

| | | |
|---|-----------------|-------------------|
| A Top edge distance from platform | Not recommended | A = 24" or higher |
| B Bottom edge distance from platform | Not recommended | B < 3" |
| H Recommended when platform fall height is: | Not recommended | H = 18" or higher |

Preschool-age

| | | |
|---|-------------------|-------------------|
| A Top edge distance from platform | A = 29" or higher | A = 29" or higher |
| B Bottom edge distance from platform | 9" < B ≤ 23" | B < 3.5" |
| H Recommended when platform fall height is: | 20" < H ≤ 30" | H > 30" |

School-age

| | | |
|---|-------------------|-------------------|
| A Top edge distance from platform | A = 38" or higher | A = 38" or higher |
| B Bottom edge distance from platform | 9" < B ≤ 28" | B < 3.5" |
| H Recommended when platform fall height is: | 30" < H ≤ 48" | H > 48" |

Overhead rings or bars are not recommended for preschool age children. Overhead ladders are not recommended for children under 4 as their upper body development will not support their own body weight by a hand grip. Horizontal ladders intended for use by preschool-age children should have rungs that are parallel to each other and evenly spaced.

Monkey bars are not recommended for playground areas. Children of all ages are susceptible to serious injuries from falling and hitting the bars or the ground. Guardrails should be added to close any gaps that result from monkey bars that are removed from play equipment.

Seesaws should have spring fulcrums or tires under the ends to cushion the seesaw when it hits the ground. If you use partial car tires as shock-absorbing material, embed them in the ground underneath the seat or secure them underneath the seat. When the seesaw unexpectedly hits the ground, it can cause tail bone and spinal injuries and broken legs. Seesaws are not recommended for preschool children unless they are equipped with a spring centering device to prevent abrupt contact with the ground if one child dismounts. Provide handholds at each seating position so children can grip them using both hands. Make sure the seesaw is free of any pinching, crushing, or entrapment hazards.

Slides should not face into the center of the playground where the exit area dumps into traffic patterns. Some slides should not be in the full sun. Metal slides and some plastic slides get very hot and can cause burns. Ensure all slides have a platform at least 19 inches long to facilitate the transition from standing to sitting at the top of the inclined slide surface. A guardrail, hood, or other device should be at the entrance of the chute to assist children with sitting and to discourage climbing. Slides should not have any spaces or gaps between the platform and the start of the slide chute. Slide exit regions should help children maintain their balance and facilitate a smooth transition from sitting to standing when exiting. The slide exit should be rounded or curved, to prevent injury.

To-fro swings seats should not weigh more than 7 pounds. The belt seats are acceptable for children over 4 years of age. Tot swings, which are designed for children under 4 years of age, should have full bucket seats as the half buckets are hazardous.

Tire swings, also called multi-axis swings, should be made of an all rubber and plastic materials. Avoid using heavy materials such as truck tires, and never use steel-belted radials. Always inspect a multi-axis swing before use. Tire swings should not trap water.

Climbing equipment should allow children to descend as easily as they ascend. Equipment should not have interior climbing bars or structural components onto which a child could fall from a height greater than 18 inches.

Flexible-grid climbing devices that provide access to platforms should be securely anchored at both ends. When one end is connected to the ground, install the anchoring devices below ground level, beneath the base of the protective surfacing material.

Sliding poles and their access structures should be located so that traffic from other equipment will not interfere with the child during descent.

Climbing ropes should be secured at both ends. To prevent strangulation, make sure ropes can't be looped back on themselves and create a loop greater than 5 inches.

Merry-go-rounds may present a physical hazard to preschoolers, so close supervision is necessary. Make sure no apparatus or handgrips extend beyond the perimeter of the platform. The merry-go-round platform should be at least 9 inches above the level of protective surfacing.

Additional Hazards

Trip hazards lead to accidents. This includes exposed footings, tree roots, objects or small toys left lying around and containment borders that are not obviously visible. If possible, remove tripping hazards, or set up barricades and supervise children to prevent access to the area.

Harmful chemicals can occasionally be found on playgrounds in unsuspected areas. Mercury and other heavy metals can be found in many playground mat and fall protection materials and adhesives, and polyurethane can contain chemicals which are harmful to young children. Lead-based paints are a hazard on painted playground equipment. Children who are exposed to flakes, dust or chips from lead-based paint may develop brain damage and/or behavioral or learning problems. Lead poisoning can cause headaches or hearing problems in young children. We know the growing bodies of children can absorb more lead than adults, and children's brains are more sensitive.

If your playground equipment contains pressure-treated wood and was manufactured or installed prior to 2004, it may contain a chemical preservative called chromated copper arsenate or CCA. Prolonged exposure to CCA-treated wood may increase the risk of lung, bladder, and skin cancer over a lifetime. Starting in 2004, CCA-treated wood is no longer processed for use in playgrounds.

Equipment not Recommended for Public Playgrounds

The Consumer Product Safety Commission has identified the following items as inappropriate for public playgrounds:

- Animal-figure swings
- Multiple-occupancy swings (not including tire swings)
- Rope swings
- Swinging dual-exercise rings and trapeze bars
- Trampolines
- Any equipment that is not anchored to or under the ground.

If your playground has any of these items, remove them immediately.

Safety Surfaces

What kind of surface is under and around your playground equipment? Is it soft, and would it absorb the shock of a child landing on it? Would they land on concrete, asphalt, hard packed earth or grass? These are not acceptable surfaces. Acceptable surfaces include sand or pea gravel. An engineered wood mulch product provides greater protection and is appropriate for disabled children. It is recommended that loose-fill materials be 12 inches thick. Loose-fill materials cannot be used overtop of hard surfaces such as concrete and asphalt, however approved unitary materials can. The thickness of unitary mats (mats, poured in place, or rubber tiles) depends on the height of the equipment. Unitary mats are more expensive than loose-fill materials and are not maintenance free. The two types of surfacing that are appropriate for children with disabilities are unitary mats and engineered wood chips.

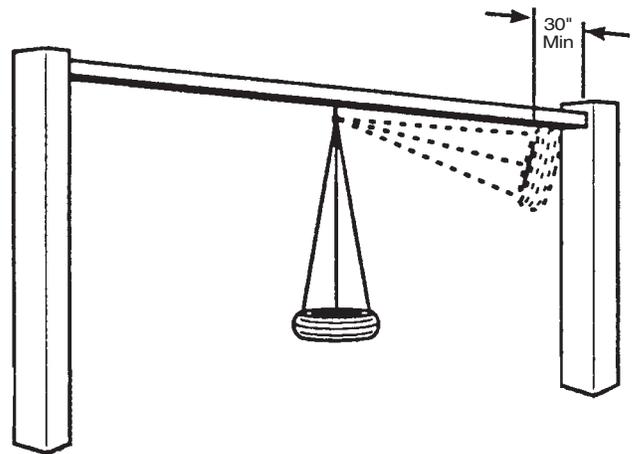
If you buy unitary surfacing materials, make sure they conform to ASTM-F1292 *Standard Specification for Impact Attenuation of Surfacing Materials within the Use Zone of Playground Equipment*.

Each surfacing material has a critical height factor—the fall height below which a life-threatening injury would not be expected to occur. The following chart shows the critical heights of various materials. For example, fine sand at an uncompressed depth of 12 inches provides a critical height of 9 feet.

| Critical Heights (in feet) of Tested Materials | | | | |
|--|--------------------|--------|---------|------------------|
| Material | Uncompressed Depth | | | Compressed Depth |
| | 6 inch | 9 inch | 12 inch | |
| Fine Sand | 5 | 5 | 9 | 5 |
| Course Sand | 5 | 5 | 6 | 4 |
| Fine Gravel | 6 | 7 | 10 | 6 |
| Medium Gravel | 5 | 5 | 6 | 5 |
| Uniform Wood Chips | 6 | 7 | >12 | 6 |
| Double Shredded Bark Mulch | 6 | 10 | 11 | 7 |
| Wood Mulch | 7 | 10 | 11 | 10 |

Spacing of Equipment

Crowding too much equipment into a small space is a hazard. Inadequate fall zones around the equipment are a hazard. The fall zone is the space around the equipment in which a child would be expected to fall. The fall zone for swings is twice the distance from the top of the swings to the surface, to the front and to the back of the swing set. If the swing set is 8 feet high, there needs to be 16 feet of space in each direction. Most equipment needs at least 6 feet around it. Equipment that is not over 30 inches high can have an overlapping fall zone of up to 6 feet. Swings and all moving equipment should be located on the perimeter of the playground out of the traffic areas. Slide exits should have an unobstructed run-off area of at least 6 feet.



Multi-axis tire swing clearance.

Fencing

Fencing should be 6 feet high around the playground. Chain link and wood are acceptable materials. Fence components should be spaced no more than 3½ inches apart. The fence should be designed to prevent children from climbing it.

Sandboxes

Sandboxes provide young children a unique opportunity to play and explore their creativity. Because a sandbox is typically located at ground level, it can be exposed to specific hazards that differ from elevated playground equipment hazards. The National Health and Safety Performance Standards outline the following safety measures for keeping a sandbox or sand play area safe for all children:

- Construct sandboxes to permit drainage.
- Cover sandboxes with a lid or other covering when they are not in use.
- Keep sandboxes free from cat and other animal excrement.

- Keep sand play areas distinct from landing areas for slides or other equipment.
- Ensure sand play area covers are adequately secured when they are lifted or moved to allow children to play in the sandbox.
- Use sand that is washed; free of organic, toxic, or harmful materials; and fine enough to be shaped easily.
- Clean sandboxes regularly, and remove foreign matter.
- Replace sand as often as necessary to keep the sand visibly clean and free of extraneous materials.
- Locate sandboxes away from prevailing winds. If this is not possible, create windbreaks using bushes, trees, or fences.

Maintenance

So many times those who install new playground equipment think that is all it takes! There's no maintenance until it breaks or wears out. Some people buy new replacement equipment, but never get around to removing the old worn out or broken "junk." There is no end to maintenance. Just like a car, it doesn't run on gas alone.

Preventive Maintenance

The first step is to identify the hazards on your playground. The second is to fix what can be repaired, remove what can't be fixed and replace what you have removed. The preventive maintenance program starts NOW and continues as long as there is a playground.

Surfacing

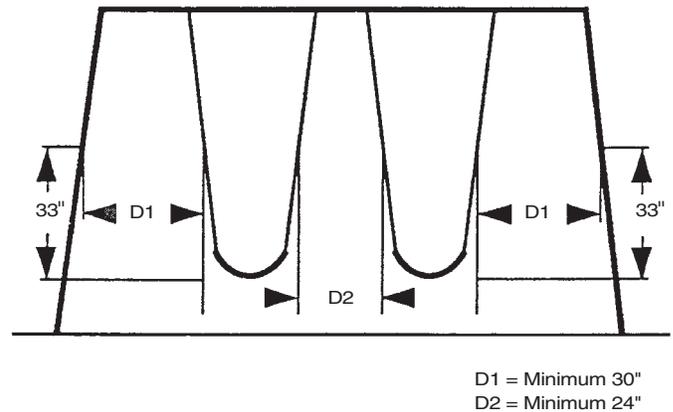
If there is no shock-absorbing playground surface, replacing the surface material is a good starting place. This means determining the critical height (see page 5). This is measured by an ASTM F1292 testing procedure.

Any type of loose material needs to be maintained, perhaps daily, by raking it back in place. Remember to store rakes and other maintenance equipment safely, away from children. Periodically, more material will have to be added to keep the resiliency at the right level. The areas under swings and at the bases of slides generally need daily maintenance.

If there are unitary materials, the daily maintenance is less. The impact attenuation or critical height testing results are available from the manufacturer. The greatest drawback is the initial cost.

Choice of surfacing is the easiest way to exclude or include disabled children on the playground. The Americans with Disabilities Act (ADA) of 1990 prohibits discrimination

on the basis of disability in public accommodations. This includes many services operated by private entities. Under Title III, the definition of public accommodation is: "a park, zoo, or other places of recreation," which include schools, nursery schools and day care centers. In order to allow "all children" access to the playground events, the surface needs to be a unitary material or an engineered wood fiber product. The engineered wood product is less costly and, when maintained, lasts a long time.



Minimum Clearances for swings

Complying with ADA Guidelines

Understanding and complying with ADA guidelines helps make your playground safer for children with disabilities. The guidelines provide design criteria for play components considered essential for accessibility. They include:

- Space for wheelchair maneuvering to and from the play component.
- Wheelchair space at the play component.
- Height and clearances of play tables.
- Height of entry points or seats.
- Provision of transfer supports (such as a grippable edge or some other means of support).

Hazardous Components

Look over all the playground equipment for the following hazards:

Protrusions are components that stick out or pieces of hardware that protrude 3/4 inch or more than two threads beyond the nut and are rough enough on the ends to scrape or cut a child. Some protrusions leave a gap between the end cap and the nut, or the nut and the flat surface. These can catch children's clothing, especially strings or items worn around a child's neck. Hand holds that stick out, bolt protrusions and ladder rungs that extend beyond the frame, at the right height can penetrate a child's eye socket or temple area of the head.

Entanglements can occur from protrusions, small “V” angles and catch points at the top of slides that catch clothing around the neck, which can cause strangulation. If there are ropes on the playground, they should be secured at both ends and not loose enough to form a loop or noose. Remove any ropes attached by children. “S” hooks on swings, if not closed within .04 inch, can entangle children’s clothing.

Sharp edges, pinch and crush points. Check all surfaces to make sure there are no sharp places that could cut the skin. If applicable, check wood surfaces for splinters. Look for little openings where a child could insert a finger and get it pinched or crushed. This type of hazard can frequently be found on suspended bridges, merry-go-rounds and seesaws.

Entrapments are openings on the equipment that would allow a child’s body to pass through, but not the head. In general, an opening may present an entrapment hazard if the distance between any interior opposing surfaces is greater than 3.5 inches and less than 9 inches. Examples of entrapments can be found between steps on slides, spacing between uprights on guardrails, openings on climbers, etc. An entrapment area can also occur in the small gap between the top of a slide and its transition platform. Children’s fingers can get caught in this area.

Elevated surfaces include platforms, decks, swinging bridges, ramps; any surface higher than 20 inches for preschool and 30 inches for school age children above the ground from which a child could fall. These must have guardrails. Surfaces above 30 inches for preschool and 48 inches for 5–12 years old must have protective barriers.

Keep in mind—if you have the molded plastic playground equipment, it must be anchored in the ground. It may require guardrails or barriers. It must have safety surfacing under and around the use zone. This applies indoors as well as outdoors.

Suspended hazards. Suspended components less than 7 feet above protective surfacing can be hazardous. You should avoid placing suspended components in high-traffic areas. Suspended components should either be brightly colored or contrast with surrounding equipment for visibility. Except for swings, any rope, cable, or chain longer than 7 inches should be fastened at both ends and should not be able to loop back to create a circle within a 5-inch or greater perimeter.

Tripping hazards. Anchoring devices for playground equipment and containment walls for loose-fill surfacing materials are common playground tripping hazards. Tree stumps and roots can be tripping hazards as well and should be removed, if possible. Install concrete footings and other anchoring devices below ground level and beneath

protective surfacing materials. This should include horizontal bars at the bottom of flexible climbers, too. Use contrasting colors for any potential tripping hazard to increase its visibility.

Purchasing New Equipment

Here are some DO’s and DON’T’s for purchasing new equipment.

Do not buy or accept used equipment that someone is discarding.

Do not buy equipment from discount, department stores or lumber yards. This is considered “backyard” equipment. It falls under a different standard and is intended for minimum use by a family.

Do research and purchase from a commercial playground company. You can find the numbers for the nearest representative by contacting the local park department or public school maintenance department.

Do use the questionnaire on “Purchasing Equipment” when you talk to playground and surfacing manufacturer’s representatives. It is shown on page 10.

What to Look for

It is important to purchase developmentally appropriate equipment. The equipment should be challenging, but not beyond the ability of the users.

If you care for children in the 2 to 5 age group, sand and water play should be included among the play events to encourage creativity. Tricycle paths around the perimeter of the playground also add to development skills and decision making. Five to 12-year olds need upper body equipment to build muscles and develop coordination. They need play equipment that is educational in nature and stimulates their imaginations, such as a multi-climber that is shaped like a boat.

Appropriate composite structures are in the range of 4 to 6 feet high for 2 to 5 year olds; not over 8 feet high for 5 to 12 years. There should be activities at the ground level as well as on the platforms. There should be one access/egress that is accessible for disabled children. Climbing decks starting with a transfer platform is the “best buy.” Ramp systems take up a lot of room and cost almost as much as the equipment. Composite structures offer more activities to a greater number of children in less space. This is a consideration if your play area is limited in size.

Swing sets should have only 2 swings to a bay. Both swings should be the same, either two bucket seats or two belt seats.

Seesaws or spring animals should have spring support devices.

Renovating the Old

When evaluating old equipment, use the hazard analysis guide. The priority hazard system indicates what priority must be given to repairing or replacing each piece of playground equipment. In other words, if it is not repaired or removed, the following kinds of injuries can occur:

Priority 1 Hazard

Indicates a life-threatening or debilitating injury. Appropriate action is to remove or fix immediately.

Priority 2 Hazard

Indicates the possibility of broken bones, stitches, etc. Appropriate action is to schedule to fix or replace as soon as possible.

Priority 3 Hazard

Indicates cuts, scrapes or other minor injuries. Appropriate action is to place on regular maintenance schedule.

Renovating will only be a short-term solution. There should be a plan for replacing the equipment that can't be repaired or fixed. Develop a time table and a budget. This will be something tangible to work toward. A general rule of thumb for long-term budget planning is to allocate 10-15% of the cost of the playground equipment for annual maintenance, repairs and replacement of equipment.

Purchasing new equipment from a reputable manufacturer is going to cost more initially, but the equipment will last longer and require less maintenance. When you develop a plan for your playground, buy the new equipment in phases to reduce the financial impact and still provide good equipment. Some manufactures have lease plans that will allow you to purchase more equipment through a payment plan.

Supervision

According to the Consumer Product Safety Commission's *Handbook for Public Playground Safety*, the quality of supervision depends on the quality of the supervisor's knowledge of safe play behavior. Therefore, supervisors should understand the basics of playground safety.



Supervision is one more important element of safety in the playground.

Supervisors need to be knowledgeable of the appropriateness of play equipment for the age groups involved, and be able to direct children to equipment appropriate for their age. Ongoing training to stay informed about current playground safety issues will help strengthen the knowledge of your supervisors.

Post playground safety rules in a prominent place. Review the rules frequently with children in your care and send a copy of your playground rules to the child's parents or legal guardian. Ask them to return a signed copy to verify they have read and understand your rules of play.

Preschool age children require more attentive supervision on playgrounds than other children, so we recommended that you maintain the following child-to-staff ratios and maximum group sizes.

| Age | Maximum Child: Staff Ratio | Maximum Group Size |
|-------------------|----------------------------|--------------------|
| Birth – 12 months | 3:1 | 6 |
| 13 – 30 months | 4:1 | 8 |
| 31 – 35 months | 5:1 | 10 |
| 3 year olds | 7:1 | 14 |
| 4 year olds | 8:1 | 16 |
| 5 year olds | 8:1 | 16 |
| 6 – 8 year olds | 10:1 | 20 |
| 9 – 12 year olds | 12:1 | 24 |

Positioning staff to supervise play activity is also critical to supervision success. Post staff in high-traffic areas to prevent collisions and near slide ramps or other elevated equipment so they can take immediate actions to prevent falls.

Staff must be well equipped to communicate with the children playing and other staff supervisors. Carrying a whistle, walkie-talkie, or other type of signal system will help.

According to the National Program for Playground Safety, a playground supervisor must be able to:

- Anticipate potential dangers and problems.
- Monitor children's behavior.
- Assess the context or environment in which supervision takes place.

Effective supervision also involves making sure children are safely dressed for playground activity. 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.

Think Safety 1st!

Have a plan in place to handle a potential injury, and practice that plan with your staff. Additionally, you should have at least one staff member providing playground supervision trained in CPR and First Aid on the playground whenever children are present.

First Aid Kits

Have at least one first-aid kit available in the playground area. Consider a “fanny-pack” first-aid kit if visiting a public playground. Your first-aid kit should include the following:

- Bandages in different shapes and sizes
- Sterile gauze sponges, non-sterile gauze pads, large trauma dressings
- Roller gauze (sterile and non-sterile), medical tape
- Antibiotic ointment (in individual packets)
- Betadyne pads, alcohol pads
- Medicine swabs (for bee stings)
- Scissors, pen light, cotton swabs, thermometer, tweezers
- Saline solution (eyewash), eyepads
- Non-latex gloves, emergency blanket, Structural Aluminum Malleable (SAM) splint, ice pack
- Accident report forms and pens, medical emergency care book
- Pocket mask or breathing device, hazardous waste bags, germ masks

Audits and Inspections

Audits

An audit is done once, unless significant changes take place on the playgrounds. You can start with the inspection form found on page 11. (It is recommended that you contract a professional certified in playground safety to complete an official safety audit.) Add to it all the dimensions of the playground. Indicate the trees and other vegetation. Keep this in a file or notebook with all information you have on the existing playground equipment. When equipment is removed, it should be noted and dated. All the paperwork that comes with new equipment should be kept in this file also. Take pictures of the old and new equipment so you will have a visual record. Recording a video is a good idea.

Inspections

Inspections should be done each week that children are using the playground, regardless of how small the playground is or how few children use the playground. There should be two types of inspections done with all playgrounds.

Visual inspection. At the beginning of each day, the person checking the building should look over all the playground equipment and surface. If everything is okay, then, using a regular calendar or daily maintenance sheet, sign and write down the time.

Written inspection. A sample form is found on page 12. The written inspection should be done once a week. It should be signed and dated, including time of day. There should be a place to “sign off” that the appropriate action has been taken. The inspection forms should be kept in the playground file.

It's Time to Get Started!

1. Develop and put in place a plan for supervision.
2. Audit the playground.
3. Develop a maintenance plan and stick to it.
4. Bring the surfacing into compliance.
5. Remove overcrowded equipment and develop fall zones.
6. Check for all equipment hazards using the priority classification, then repair or remove.
7. Hold a training session on maintenance and supervision, and record those attending and the hours spent on training.

This is a good “do it yourself” guide for a safe playground. If you need more help, it is available. National Playground Safety Inspectors are registered through the National Recreation and Park Association. NRPA can furnish you with information on playground safety training programs, also.

Purchasing Playground Equipment

In preparing to purchase new or replacement equipment, here are some questions that need to be answered during the selection process.

Is this piece of equipment in compliance with the *Consumer Product Safety Commission Handbook (CPSC)*; Will it comply with the American Society of Testing and Materials (ASTM) Volunteer Standard (F1487)?

The *CPSC Handbook* is a voluntary compliance guideline that is a good reference when purchasing playground equipment. The ASTM Standard is geared to the manufacturer. The two documents are similar and need to be referenced when reviewing your selection of equipment.

Is the manufacturer a member of ASTM Volunteer Standards Committee for Public Playground Equipment? ASTM Home Playground Committee?

Because of all the changes that are occurring in the playground industry, it is important that the manufacturers are a part of this process.

How many years has the manufacturer been in business?

Where can you see new equipment and equipment that has been in use for over five years?

Are there warranties on all the materials and workmanship of the product?

Choose a company that stands behind the materials as well as the finished product.

Do they carry Product Liability insurance?

What are the limits? They should carry \$1 million or more. Longer coverage and greater amounts show greater stability in the company.

How durable is the equipment?

Evaluate the strength and ability of the materials to withstand heavy use and exposure. Do they use stainless steel, galvanized metals, aluminum, lexan plastics and/or quality wood products that are pressure treated in accordance with the American Wood Products Association Standard? Ask about the products, the design staff, the production process, the replacement policy and how the equipment is shipped.

Do they provide detailed installation instructions?

Ask for spec or cut sheets on each piece of equipment. Do they do the installation? Do they provide a supervisor to work with your installation crew?

Will the manufacturer's representative be available at the installation time and whenever you have questions or concerns about your purchase?

Do they provide design and layout services?

Will they charge you for these services? Will they provide review services for your layouts and designs?

Do they provide risk-management services?

This would include an inspection program and inspection forms. Do they have an audit program or forms with guidelines on how to use them effectively? What other information can they supply you on using their equipment safely?

Is the equipment accessible to the disabled?

According to the Americans with Disabilities Act of 1990, the equipment is required to be accessible to people with disabilities. ASTM F1487 states that public playgrounds shall comply with the *Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities: Play Areas*.

What kind of surface material have you selected for your playground?

Americans with Disabilities requires this to be an accessible surface. There is an ASTM Standard for the critical height of equipment in relation to the protective surface that your surface material must meet. Does the design call for adequate safety surfacing?

What kind of a maintenance program is suggested by the manufacturer?

Are there maintenance instructions and a standard of care?

What are the procedures for ordering replacement parts and the availability?

If purchasing surfacing separately, the same questions need to be asked of the surfacing manufacturer.

Playground Safety Audit

Use with the initial inspection of the playground.
You do not need to use it again unless the playground changes

Location: _____

Owner: _____

Person in Charge: _____

Layout and Design: _____

Size: _____ Number of Trees: _____ Other types of vegetation: _____

Diagram: _____ Attach pictures to back.

Type of ground cover: _____

Surfacing in fall zones: _____ Depth: _____

Other comments: _____

Site Furnishings: _____

| <u>Equipment</u> | <u>Manufacturer</u> | <u>Date of Purchase</u> | <u>Condition</u> |
|------------------|---------------------|-------------------------|------------------|
| _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ |

Attach a completed inspection form.

Is playground and equipment in compliance with ASTM F1487-05 or CPSC *Handbook for Public Playground Safety*?

Write a plan and timetable for bringing the playground into compliance.

Person completing the audit: _____

Address: _____

Relationship to owner: _____

Date of audit: _____ Time: _____

Playground Inspection Form

Location: _____
 Inspected by: _____
 Date: _____ Time: _____ Weather: _____
 Contact Person: _____ Position: _____

Hazard Analysis

X = O.K.

Priority 1 = Life Threatening

Priority 2 = Serious Injury

Priority 3 = Minor Injury

| EQUIPMENT | SWINGS | SLIDES | TEETER TOTTER | CLIMBERS | PLAY STRUCTURE | OTHER | RATING | ACTION TAKEN | DATE COMPLETED |
|---------------------|--------|--------|---------------|----------|----------------|-------|--------|--------------|----------------|
| Chains | | | | | | | | | |
| S-Hooks | | | | | | | | | |
| Seats | | | | | | | | | |
| Hanger Bearings | | | | | | | | | |
| Grease Fittings | | | | | | | | | |
| Stability in Ground | | | | | | | | | |
| Exposed Concrete | | | | | | | | | |
| Tilting | | | | | | | | | |
| Hand Railing | | | | | | | | | |
| Support Bars/Legs | | | | | | | | | |
| Fastening Points | | | | | | | | | |
| Entrapment Points | | | | | | | | | |
| Sharp Edges/Points | | | | | | | | | |
| Slide Stairs | | | | | | | | | |
| Slide Platform | | | | | | | | | |
| Slide Bed | | | | | | | | | |
| Tube Slides | | | | | | | | | |
| Springs & Bars | | | | | | | | | |
| Handles | | | | | | | | | |
| Wood | | | | | | | | | |
| Painted Surfaces | | | | | | | | | |
| Protrusions | | | | | | | | | |
| Caps & Plugs | | | | | | | | | |
| Pivot Points | | | | | | | | | |
| Surfaces | | | | | | | | | |
| Border Material | | | | | | | | | |
| Fences | | | | | | | | | |
| Debris | | | | | | | | | |

Comments: _____

Resources

PLAYGROUND SAFETY PROGRAMS

National Recreation and Park Association
National Playground Safety Institute
22377 Belmont Ridge Road
Ashburn, Virginia 20148
www.nrpa.org

University of Northern Iowa
School of Health, Physical Education, and Leisure Services
Cedar Falls, Iowa, 50614
www.uni.edu/coe/hpels/

VIDEOS

All videos are available from:

The National Program for Playground Safety
University of Northern Iowa
Cedar Falls, Iowa 50614
www.playgroundsafety.org

- ABC's of Playground Supervision
- Nuts and Bolts of Playground Maintenance
- Planning S.A.F.E. Playgrounds
- S.A.F.E. Playgrounds
- S.A.F.E. Surfaces
- Sammy's Playground Pointers
- S.A.F.E. Playground Supervision Kit

REFERENCES

American Society of Testing and Materials
100 Barr Harbor Drive

West Conshohocken, Pennsylvania 18428-2959

- ASTM F1148: *Standard Consumer Safety Performance Specification for Home Playground Equipment*
- ASTM F1487: *Standard Consumer Safety Performance Specification for Playground Equipment for Public Use*
- ASTM F1292: *Standard Specification for Impact Attenuation of Surfacing Materials within the Use Zone of Playground Equipment*
- ASTM F2373: *Standard Consumer Safety Performance Specification for Public Use Play Equipment for Children 6 Months through 23 Months*

National Recreation and Park Association
22377 Belmont Ridge Rd.
Ashburn, VA 20148
www.nrpa.org

National SAFE KIDS Campaign
1301 Pennsylvania Ave., NW
Suite 1000
Washington, DC 20004
www.safekids.org

National Safety Council
1121 Spring Lake Drive
Itasca, IL 60143-3201
info@nsc.org

U.S. Consumer Product Safety Commission
4330 East-West Highway
Bethesda, Maryland 20814-4408
www.cpsc.gov



MARKEL INSURANCE COMPANY

4600 Cox Road
Glen Allen, Virginia 23060
(800) 431-1270