

## *Before You Design That Playground . . . . . . here are some Safety Considerations*

This bulletin presents safety information for playground equipment. Its purpose is to promote greater safety awareness among those in the school community who plan, design, purchase, install, and maintain the playgrounds at our schools. These guidelines are not being issued nor expected to be construed as the sole method to minimize injuries associated with playground equipment. There are additional resources available that are described later in this bulletin.

The safety of each piece of playground equipment as well as the layout of the entire area should be considered when designing or evaluating a playground for safety. An important safety concern is also the installation and maintenance of protective surfacing under and around all equipment.

When planning a playground, consideration needs to be given for the age of the children who will be utilizing the area. The designs should accommodate age appropriate differences in children as they relate to physical size, ability, intellectual, and social skills.

### Selecting a Site

Site Factor	Questions to Ask	If yes, then . . .
Travel patterns of children to and from the playground	Are there hazards in the way?	Clear hazards
Nearby accessible hazards such as roads with traffic, bodies of water, drop-offs, etc.	Could a child inadvertently run into a nearby hazard?  Could a younger child easily wander off toward the hazard?	Provide a method to contain children within the playground. For example, a dense hedge or a fence. The method should conform to safety and building codes.
Sun Exposure	Is sun exposure sufficient to heat exposed bare metal slides, platforms, and steps enough to burn children?	Bare metal slides, platforms, and steps should be shaded or located out of direct sun.
Slope and drainage	Will loose fill materials wash away during periods of heavy rain?	Consider proper drainage re-grading to prevent wash outs.



## Playground Layout

There are several key factors to keep in mind when laying out a playground.

- **Accessibility.** Ability to access the playground apparatus, including for disabled children
- **Age Separation.** Make sure children of varying ages do not utilize the same equipment (2-5 yo, 5-12 yo)
- **Conflicting Activities.** Swings should not be placed in the pathway leading to another play structure
- **Sight lines.** Ability to keep track of children as they move through the structure.
- **Signage.** Guide as to the age appropriateness of the equipment
- **Supervision.** Supervisor should be aware that not all equipment is appropriate for all ages

## Natural Playgrounds

Natural playgrounds are play environments that incorporate elements such as rocks, wood, and living plants as part of the play area. These natural playgrounds are growing in popularity. While the safety standards do not specifically address these types of “structures” they do have a section that encompasses non classified equipment. The highlights of such are below.

Please ensure that when you are designing a natural playground that you abide by the below standards. As an example, make sure the rock climbing structures or log climbs are not spaced too close together (*even the materials themselves*) and impede on a use zone. This would result in a student falling off one structure onto another and not the protective surfacing material.

### **5.3.9 “Fall height and use zones not specified elsewhere”.**

- The use zone should extend a minimum of 6 feet in all directions from the perimeter of the equipment.
- The fall height of a piece of playground equipment is the distance between the highest designated playing surface and the protective surface beneath it.
- The use zones of two stationary pieces of playground equipment that are positioned adjacent to one another may overlap if the adjacent designated play surfaces of each structure are no more than 30 inches above the protective surface and the equipment is at least 6 feet apart.
- If adjacent designated play surfaces on either structure exceed a height of 30 inches, the minimum distance between the structures should be 9 feet.
- Use zones should be free of obstacles.

## Equipment

You should make sure that the playground equipment manufacturer is a member of International Playground Equipment Materials International (IPEMA). When selecting playground equipment it is important to know the age range of the children who will be using the playground. The following table shows age appropriate equipment.

<b>Age Appropriate Equipment</b>	
<p style="text-align: center;"><b>Preschool- Ages 2-5</b></p> <ul style="list-style-type: none"> <li>• Certain climbers*</li> <li>• Horizontal ladders less than or equal to 60" high for ages 4&amp;5</li> <li>• Merry-go-rounds</li> <li>• Ramps</li> <li>• Rung ladders</li> <li>• Single file step ladders</li> <li>• Slides*</li> <li>• Spiral slides up to 360 degrees</li> <li>• Spring rockers</li> <li>• Stairways</li> <li>• Swings (belt, full bucket seats, rotating tire)</li> </ul>	<p style="text-align: center;"><b>Grade School- Ages 5-12</b></p> <ul style="list-style-type: none"> <li>• Arch climbers</li> <li>• Chain or cable walks</li> <li>• Free standing climbing events with flexible parts</li> <li>• Fulcrum seesaws</li> <li>• Ladders (horizontal, rung, &amp; step)</li> <li>• Overhead rings*</li> <li>• Merry-go-rounds</li> <li>• Ramps</li> <li>• Ring treks</li> <li>• Slides*</li> <li>• Spiral slides more than one 360 degree turn</li> <li>• Stairways</li> <li>• Swings (belt &amp; rotating tire)</li> <li>• Track rides</li> <li>• Vertical sliding poles</li> </ul>
<p><b>Items marked with * have additional safety concerns that should be reviewed in the Handbook for Playground Safety</b></p>	

## Equipment Not Recommended

Some playground equipment is not recommended for use on playgrounds including:

*Trampolines*

*Swinging gates*

*Giant strides*

*Heavy metal swings*

*Multiple occupancy swings Rope swings*

*Climbing ropes that are not secured at both ends.*

## Surfacing

The surfacing under and around playground equipment is one of the most important factors in reducing the likelihood of life threatening injuries. Loose fill surfacing materials need to be at a depth of no less than 9 inches.

Appropriate Surfacing	Inappropriate Surfacing
<ul style="list-style-type: none"> <li>• Any material tested to ASTM F1292, including unitary surfaces, engineered wood fiber, etc.</li> <li>• Pea gravel</li> <li>• Sand</li> <li>• Shredded/ recycled rubber mulch</li> <li>• Wood mulch (not CCA treated)</li> <li>• Wood chips</li> </ul>	<ul style="list-style-type: none"> <li>• Asphalt</li> <li>• Carpet not tested to ASTM F1292</li> <li>• Concrete</li> <li>• Dirt</li> <li>• Grass</li> <li>• CCA treated wood mulch</li> </ul>

## Installation

Your installer should be a member of the National Playground Contractors Association International (NPCAI). If from a cost savings perspective, the school chooses to have the “community” install the equipment, a representative from the manufacturer should be present to direct the installation.

## Resources

For a more comprehensive resource please see the *Public Playground Safety Handbook* from the U.S. Consumer Product Safety Commission. That can be found on our website at <http://www.vsbit.org/assets/Multiline-PDFs/PlaygroundSafetyHandbook.pdf> .

It is also extremely important that equipment comply with ASTM F1487-07ae1 Standard Consumer Safety Performance Specification for Playground Equipment for Public Use. ASTM was formed over a century ago as American Society for Testing & Materials and has long been the standard. You can view an abstract of this standard at <http://www.astm.org/Standards/F1487.htm> . If a member needs assistance in obtaining this material please feel free to contact us.

Manufacturers who are part of the International Playground Equipment Manufacturers Association, IPEMA, have equipment that complies with the ASTM standards. For more information you can go to [www.ipema.org](http://www.ipema.org) .

The National Recreation and Park Association has a presentation, “The Dirty Dozen”, which discusses the twelve most common causes of injuries on playgrounds. The link to that site follows: <http://www.nrpa.org/Content.aspx?id=585> .

Please contact the Multi-Line Program to have a certified playground safety inspector provide a consultation.

We here at the Multi-Line Program are always here as a resource for our members. Please feel free to contact us at any time.

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