

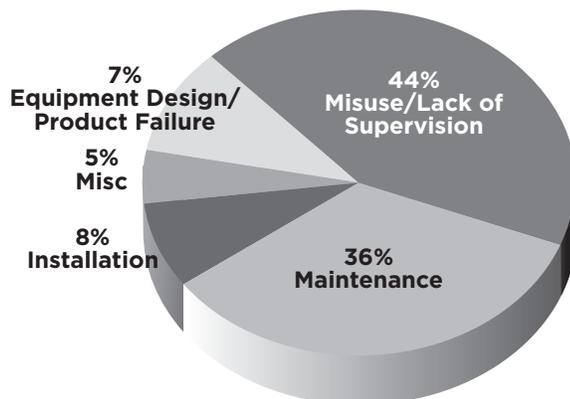
In a typical year, almost 190,000 playground accidents require emergency hospital treatment. And according to the U.S. Center for Disease Control, children ages 5 to 9 have the highest injury rate than any other group. Many of these childhood injuries could be prevented, but it takes effort by everyone involved with the playground—from the designer to the owner to the user of the play equipment.



“Preventing injuries takes effort by everyone involved with the playground.”

What are the major causes of playground accidents? According to the chart below, misuse of equipment and lack of adequate supervision contribute to the largest number of playground mishaps each year. Poor maintenance is the second highest factor. Together, these causes account for more than three-fourths of all playground injuries suffered every year. And all of the injury causes listed—including inadequate site planning and poor equipment design, installation and performance—can be minimized when everyone takes responsibility for playground safety.

PRIMARY CAUSES OF PLAYGROUND INJURIES¹



¹Statistics compiled by the Landscape Structures risk managers and claims investigators using 10 years of accident report history.

Safety responsibilities

When playground safety is a team effort, it starts at the earliest design stages and continues through the playground's day-to-day operation.

The site planner is responsible for:

- Selecting age-appropriate equipment and resilient surfacing.
- Allowing circulation patterns around and through the equipment to prevent traffic conflicts.
- Planning for access, drainage, shade, visibility and other factors.
- Soliciting input from children, parents, professionals and others who have an interest in the playground's safety and success.

The manufacturer is responsible for providing:

- Equipment that conforms to American Society for Testing and Materials (ASTM), Consumer Product Safety Commission (CPSC), Americans with Disabilities Act (ADA) and other recognized safety and accessibility standards.
- Clear and concise installation instructions.
- A step-by-step maintenance program.
- Product liability insurance to protect the playground's owner against lawsuits that result from equipment failure.

The installer is responsible for:

- Installation according to the manufacturer's recommendations.
- Insurance coverage on the work performed.

The playground operator (e.g., a park department or school) is responsible for:

- Identifying the age range of the intended users.
- Supervision of the playground, when appropriate.
- Posting safe-use instructions, when appropriate.
- Following the manufacturer's instructions for maintaining the equipment.
- Safety inspections (periodic).
- Repairs.

Parents and other adults on the playground are responsible for:

- Supervising children to assure safe play.
- Mediating conflicts that occur between different children or age groups.

Users, or children, have the responsibility of:

- Playing without hurting others.
- Knowing their limitations.
- Following instructions.
- Obeying parents and other adult supervisors.

The most important safety factors in designing a playground are:

- *Age-appropriateness* of sites and play equipment. School-age children (ages 5 to 12) and preschool children (ages 2 to 5) have different dimensions, skills and play styles. You should provide separate play areas for each group.
- *Environmental conditions*. Be sure the play area will be adequately shaded to protect against sun exposure, well-drained, visible from nearby paths, away from automobile and bicycle traffic, and separated from water or other natural hazards.
- *Equipment design*. Playground equipment should be structurally sound, durable and engineered with safety in mind. *(For more on this topic, see the next section.)*
- *Layout of play area*. If you aren't familiar with how children's play patterns affect playground use, consult a landscape architect or a professional designer. Your Landscape Structures representative can also help with layout to minimize traffic conflicts.
- *Protective surfacing*. This can be an adequate depth of a loose-fill material, factory-made resilient tiles, a poured-in-place safety surface, or a combination. One effective approach is to provide a loose-fill material for most of the use zones, with paths of TuffTurf® Tiles or a similar material where accessibility is required. This solution has the added benefit of making your equipment accessible to children in wheelchairs.

Selecting equipment

Despite today's emphasis on government and industry safety guidelines, there are significant differences between brands of playground equipment. Some equipment—such as custom-built wooden structures—may not meet safety standards at all.

When specifying equipment, you should insist that the equipment conforms to the following:

- The Consumer Product Safety Commission's *Handbook for Public Playground Safety*.
- The ASTM F1487 *Standard Consumer Safety Performance Specification for Playground Equipment for Public Use*. All equipment should be certified to conform to this standard according to the procedures established by the International Playground Manufacturer's Association (IPEMA).
- Accessibility requirements of ADA.

- Make sure the protective surfacing around the equipment has been tested by a third party according to the ASTM F1292 *Standard Specification for Impact Attenuation of Surfacing Materials within the Use Zone of Playground Equipment*.

You should also look for engineering and construction features such as:

- Appropriate deck heights for the age group that will use the equipment.
- Structural integrity of posts, decks and other components.
- Secure fastening methods (e.g., well-designed clamp-and-post systems or through-the-post fasteners).
- Corrosion protection, such as the use of aluminum or galvanized steel components with coatings of polyester or PVC. Bolts and pins should be plated or made from stainless steel.
- Special coatings on decks, handrails and other areas that require maximum traction and insulation from temperature extremes.
- Plastics with UV stabilizers and other additives that prevent deterioration.
- Non-toxic coatings such as polyester powder coatings instead of paint.
- Protrusion-free design to avoid puncture wounds, eye injuries, cuts, scrapes and bruises.
- Gap-free decks and other components, to prevent entrapment of fingers, heads and bodies.
- Slides with entrance hoods and runout areas.
- Swing fasteners that use a fully enclosed design, rather than older (and more dangerous) S-hooks.
- Vandal-resistant hardware that requires a special tool for removal.

Installation

Ideally, site preparation and equipment installation should be handled by certified professionals. If a limited budget makes this impractical, it can be safe to use volunteer labor for much or all of the process—as long as the following conditions are met:

- The manufacturer provides detailed instructions on how to install the equipment. This should be in the form of a manual that has been customized for your specific equipment.
- Your volunteer crews are well-organized. (Landscape Structures offers a manual, *Community Built Playgrounds*, that covers every aspect of volunteer organizing, design and installation.)
- Your installation is supervised by a manufacturer-certified installer.

Inspections and maintenance

With poor maintenance being responsible for some 36 percent of all playground injuries, it's vital that your organization develop a suitable preventive maintenance program. Manufacturers can help. For example, Landscape Structures delivers a project specific Maintenance Kit for every Evos™, PlayBooster® or PlayShaper® playstructure.

It's important to remember these rules:

- Be thorough. A maintenance checklist shouldn't merely say "check swing hanger for excessive wear." Instead, it should say: "Replace swing hanger when worn to 50 percent of original diameter."
- Maintain records. Being able to show who did the inspections, when they were performed, what the results were, and what repairs were made can be important when you're faced with a possible lawsuit.
- Inspections aren't just to ensure proper maintenance—they can also help you identify hazards from equipment that was improperly designed or installed in the past. That's why we recommend:
 - A safety audit of all your playgrounds to ensure compliance with current ASTM, CPSC and ADA guidelines. Whenever possible, have such audits performed by a staff member or outside consultant who has completed the National Playground Safety Institute's Certified Playground Safety Inspector training.

We're ready to help

At Landscape Structures, we have a long history of involvement in playground safety issues. Our chairman, Steve King, heads an ASTM task group that sets voluntary safety standards for playground equipment. For help in designing a safer playground, or for free resource materials that can help in your planning, call your local Landscape Structures representative.

FOR MORE INFORMATION

These resources are available from your local Landscape Structures representative:

ASTM F1292-04 Standard Specification for Impact Attenuation of Surfacing Materials within the Use Zone of Playground Equipment.

ASTM F1487-07 Standard Consumer Safety Performance Specification for Playground Equipment for Public Use.

ADA Accessibility Guidelines for Play Areas, Access Board.

Handbook for Public Playground Safety, U.S. Consumer Product Safety Commission.

Building Wonderful Playgrounds
playground planning brochure, Landscape Structures Inc.

"Age-Appropriate Play Equipment," Playguide™ Bulletin No. 1, Landscape Structures Inc.



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