Playground Safety

The playground and playground equipment are the highest risk areas in a child care facility for injury and death. Special attention and implementation of safety standards to these areas will reduce the risks of serious injury and death.

All child care providers have a legal "duty of care" to ensure the safety of children in their care. Failure to fulfil this "duty of care" can result in fines, loss of care facility license and imprisonment for the owner and staff of the facility. The safety standards are considered as a "minimum standard of care" in a court of law.

Playground Safety Standards - S.A.N.S (SABS)

Standards are generally considered the minimum standard of care. This standard of care is imposed by the new "Duty of Care" application of the law.

The aim of the standards is to reduce the severity of accidents and deaths. The international community has been using playground safety standards as early as 1976 and in some countries, even as early as 1929.

The implementation of playground safety standards internationally has proven to reduce accidents and deaths by as much as 80%. This is a triumph which cannot be ignored and South Africa cannot continue to deny or ignore the reality of serious injuries and deaths on playgrounds in South Africa.

The South African National Standards include:

South African National Standard SANS 51176 parts 1, 2, 3, 4, 5, 6, 7, 10 and 11 and Surfacing requirements underneath playground equipment and South African National Standard SANS 54960. Summarised below what is covered.

1. Proper Surfacing

A massive 70% of all playground accidents are because of falling, so correct surfacing under playground items is top of our list. Ideally any structure with a highest standing or sitting point of over 50cm should be installed with impact absorbing surfacing to a minimum depth of 30cm. Acceptable surfaces are hardwood fibre/mulch, sand, rubber chips or matting and any surface must drain and be kept clear of debris etc. Grass, artificial or natural, is NOT accepted or safe. All installers of safety or impact surface must provide a certificate of compliance with the SANS 51177. Any playground equipment higher than 600 mm from the ground surface should have an impact or safety surface. Playground equipment with an approved safety or impact surface should not be higher than 1, 5 meters high, in an early childhood development environment.

Paved bricks, black pitch surfaces (tar), grass, concrete and compacted sand or other hard surfaces are not acceptable.

2. *Spacing: Fall zones*

The fall zone is the area that is calculated both around and under a piece of playground equipment as where a child may fall and current standards set it at 2m. This means your Safety Surfacing should always cover an area at least 2m away from the equipment’s edge. Swings carry the largest fall zone, believe it or not, as the safety surfacing must allow for child at full swing height, to want to jump off and continue 2m outside this point.

3. *Spacing: Equipment*

The fall zones for individual pieces of equipment cannot overlap, and there must be a minimum of 2m between each item. As well as preventing children falling from one structure to another, it enables them space to move freely and safely in between. This also relates to outside boundary structures such as walls and fences; all playground equipment should be installed at least 2m from these.

4***. Risk of Protrusion or Entanglement***

A protrusion is anything, usually a piece of hardware that protrudes and may cause either an injury or entanglement on hair or clothing. For example, a protruding bolt or open hook, any rungs or handholds that protrude from the main structure. Entanglements can be caused by loose hanging rope or chain and any used should be firmly fixed at both ends and not able to form a loop or noose. Don't allow children to tie or clip additional belts, ropes or anything that could also form a loop or noose or cause entanglement to their playground equipment and tuck in or remove any loose clothing or clothing drawstrings, cords etc.

5. Size of Openings

Put simply, any opening on a piece of playground equipment should not fall within the sizes of 8 and 23cm as they then can add to risk of head entrapment and strangulation. Big enough to allow a child's head through (in a Wendy House hatch window for example) is acceptable but when it comes to equipment such as cargo nets, ladder rungs, handrails etc. then current Standards advise to make spaces SMALLER than 8cm to prevent additional risk.

6. Possibility of Trip

Try and avoid raised structure components at ground level, raised borders, tree stumps, tree roots and rocks or sudden or too high changes in ground levels which are all common cause of trip and fall in playgrounds.

7. Crushing, Pinching and Sharp Edges

All components to the equipment in a playground should be free of sharp edges or points that could cut skin. Moving pieces, such as swings, seesaws, merry-go-rounds and suspension/wobbly bridges should have no moving parts that could pinch or crush a child's finger.

8. Handrails/Guardrails on Raised Platforms

Any raised platform is required to have a guard or handrail that would prevent accidental fall from the platform at any open sides. Correct size of openings must be considered for spacing between rails and different heights of platform pertain to different age groups. For Pre-schoolers, any platform higher than 30cm is required to have a rail. And for Primary age and up, any platform higher than 76cm.

9. Lack of Maintenance

For playgrounds to remain in safe condition a program of systematic, preventive maintenance must be present. Regularly check for 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 and the surfacing material must also be maintained. Current standards advise to call in a specialist when maintenance is required and book a regular annual safety check on your playground. In addition to their safety, it shows our children that we value their spaces and their play.

10. Suitability

The average age span of children in our playgrounds is two to twelve. There's a big difference in development between those ages and it is imperative to ensure that the equipment chosen and installed in a playground is

appropriate for the intended age group. Any preschool play areas and equipment should be sited separately to other play areas for older age groups.

11. Supervision

Over 40% of all playground accidents occur when a child is not under supervision. Pre-schoolers are prone to testing their abilities beyond their boundaries and must be supervised on playground equipment always. Thought must be given to playground design that makes it easy to observe children at play and adult to child ratios should be observed. Help younger children learn to use playground equipment correctly and deter rough play, pushing, fighting etc.

12. Shading

Last on our list, but so essential that we will not install a playground piece in the sun without it. Our South African sun is much loved, and very hot. Any playground piece sited in an unshaded area must be installed with additional shading. Equipment can heat up to such high temperatures as to cause serious burns and children should also remain in the shade when playing at hot times of the day for any length of time to protect them from additional sunburn. Natural shading, such as trees, is acceptable but must give full cover at hot times of the day or additional shading may have to be installed.

13. Inflatable hazards

Inflatable amusement and play equipment - Safety requirements and test methods

Events with mobile amusement rides have recently come to the attention of Public Safety Authorities. This includes giant slides, other large inflatable amusement play equipment, mechanical bull rides, zip lines, motorised go-carts, quad bikes et cetera have also caused serious injuries and fatalities to children and adults. The safety standard is SANS 54960.

The SANS standards for inflatables are used in conjunction with the following statutory and common laws in litigation and for compensation for injury and death.

The Occupational Health and Safety Act of 1993.

Department of Labour Safety Regulations

The South African Bill of Rights. (Section two - exposure of children to hazards)

The Child Care Act 74 of 1983 amended in 2010 (environment safety of children in partial care)

Disaster Management Act No. 57 of 2002

The South African Schools Act, 1996 (act no.84 of 1996) regulations for Safety Measures at public schools. (Section 8A, 8B, 8D, 8E, 8F, 9.4)

Municipal by- laws - Local Health Department (licensing of crèches and early childhood development centres, exposure of children to dangerous structures, this includes dangerous and poorly maintained play structures or absence of maintenance)

Common Law (negligence, recklessness)

Duty of Care ("standard of care" as set out by the Department of Social Development)

South African National Consumer Act (sale, supply, distribution of unsafe products including playground equipment and unsafe inflatable jumping castles, slides etc.)

Inflatable amusement rides or devices (jumping castles, bounce houses, moonwalks, gladiator challenges, climbing walls, parachute rockets, zorb balls and mechanical bull rides etc.) are becoming popular attractions at events all over South Africa.

It is up to event organizers to ensure the safety of the public on these inflatables. This includes events held at school fun days and charity or school fund raisers. The Playground Safety Institute together with the South African Bureau of Standards (SABS) published inflatables safety standards for South Africa 2011. The safety standard is SANS 54960 Safety Standards for the manufacture and operation of inflatable amusement rides or devices.

The following stake holders must ensure compliance with the safety standard:

4. Inflatable manufacturers and suppliers, Inflatable hire service providers, Events safety coordinators and organizers, School event organizers, management and staff,

5. Injuries: This is high risk of fractures, spinal injury, head injury (brain damage) and death and these injuries are caused by:

    5.1. No supervision or adequate supervision being provided

    5.2. Users of the inflatables somersaulting down giant slides or from inflatables.

    5.3. Users falling onto other users climbing up the ladders which lead to the top of giant slides.

    5.4. Inflatables collapsing with too many users on the inflatables (over-crowding) especially giant slides etc.

    5.5. Electrocution from electrical cables supplying inflatable air blowers/fans.

    5.6. Users colliding into each other.

    5.7. Inflatables becoming airborne due to not being tethered or staked properly

    5.8. Inflatables being operated in high winds.

    5.9. Safety standard not incorporated into the design and manufacture of inflatables.

    5.10. Inflatable not being operated properly (see safety guidelines for inflatables)

    5.11. Inflatables deflating suddenly from power supply being cut off suddenly

    5.12. Inflatables bursting at stitched seams from wear and tear or defect of seams in manufacturing process.

    5.13. No crash mats or safety mats being provided around apron or open sides of inflatables.

Applicable laws

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Stakeholders

All Stakeholders must ensure compliance with the standards.

These stakeholders include:

playground equipment manufactures and designers, playground equipment suppliers and installers, playground maintenance contractors, schools, primary and pre-primary schools, early childhood development centres and crèches, event organizers, event management and event safety coordinators, amusement ride operators or contractors including inflatable amusement ride hirers and inflatable amusement ride manufacturers, indoor and outdoor adventure play parks and party venues, municipal public parks, holiday resorts, hotels and guest houses, restaurants, travel rest facilities at petrol station, zoo and other park and recreational facilities, garden centres with playgrounds and play equipment, housing complexes with play parks and play equipment, liability insurers, personal injury attorneys.

It is recommended that an annual safety audit be conducted on your playground equipment by a playground safety professional. These audits will help you to identify hazards on your playground and playground equipment. The audit will help you to eliminate, mitigate and control any hazards which are dangerous or life threatening and should be part of your playground safety management programme.

By selecting a Playground Safety Auditor that is registered with the Playground Safety Institute, will ensure that your auditor has been trained and tested according to international standards and best practice.

Certification for playground safety auditors is only valid for three years. Ensure that your playground safety auditor has in-date certification. Check for expiry date of certification or contact the Playground Safety Institute to see if the playground safety auditor is currently certified.

Playground Design Safety

The most important factors in evaluating the safety of any playground are proper surface, design and spacing, and equipment inspection and maintenance.

Surfaces

A proper playground surface is one of the most important factors in reducing injuries — and the severity of injuries — that occur when kids fall from equipment. The surface under the playground equipment should be soft enough and thick enough to soften the impact of a child's fall.

Here are some things to consider:

- Concrete, asphalt, and blacktop are unsafe and unacceptable. Grass, soil, and packed-earth surfaces are also unsafe because weather and wear can reduce their capacities to cushion a child's fall.
- The playground surface should be free of standing water and debris that could cause kids to trip and fall, such as rocks, tree stumps, and tree roots.
- There should be no dangerous materials, like broken glass or twisted metal.
- The surfaces may be loosely filled with materials like wood chips, mulch, sand, pea gravel, or shredded rubber. Wood chips containing chromate copper arsenate (CCA) treatment are not recommended since the material can pose a potential health hazard.
- Surfacing mats made of safety-tested rubber or rubber-like materials are also safe.
- Rubber mats allow the best access for people in wheelchairs.
- Loose-fill surface materials 12 inches deep should be used for equipment up to 8 feet high. The material should not be packed down because this will reduce any cushioning effect.
- No surfacing materials are considered safe if the combined height of playground and the child (standing on the highest platform) is higher than 12 feet.
- The cushioned surface should extend at least 6 feet past the equipment. Additional coverage may be needed, depending on how high a slide is or how long a swing is.
- If there is loose-fill over a hard surface (like asphalt or concrete), there should be 3-6 inches of loose-fill like gravel, a layer of geotextile cloth, a layer of loose-fill surfacing material, and then impact mats under the playground equipment.

Keep in mind that even proper surfacing can't prevent all injuries. Also, the greater the height of the equipment, the more likely kids may get injured if they fall from it.

Design and Spacing

Playground equipment should be designed for three different age groups: infants and toddlers under 2, 2- to 5-year-olds (pre-schoolers), and 5- to 12-year-olds (school-age kids).

In the safest playgrounds, play areas for younger children are separated from those meant for older kids and signs clearly designate each area to prevent confusion.

Younger children should not play on equipment designed for older kids because the equipment sizes and proportions won't be right for small kids, and this can lead to injury. Likewise, older kids shouldn't play on equipment designed for younger ones. Smaller equipment and spaces can cause problems for bigger kids.

Here are some things to check for to ensure the equipment is designed and spaced to be safe:

Guardrails and protective barriers should be in place for elevated surfaces, including platforms and ramps.

Play structures more than 30 inches high should be spaced at least 9 feet apart.

Swings, seesaws, and other equipment with moving parts should be in an area separate from the rest of the playground.

Swings should be limited to two per bay.

Tot swings with full bucket seats should have their own bay.

Swings should be spaced at least 24 inches apart and 30 inches between a swing and the support frame.

Be sure there are no spaces that could trap a child's head, arm, or any other body part. All openings on equipment (for example, rungs on a ladder or bars on a guardrail) should measure less than 3½ inches or they should be wider than 9 inches.

Climbing nets should have openings that are either too small to allow a child's body through or large enough to prevent entrapment of the head. Net perimeters which are 17-18 inches pose entrapment hazards.

Playground equipment with moving parts — like seesaws and merry-go-rounds — should be checked.

Maintenance and Inspection

Whether your kids play on a home or public playground, it's important for you to take a general look at the equipment to make sure that it is clean and well maintained.

Broken equipment

There should be no broken equipment.

Wooden equipment should not be cracking or splintering.

Metal equipment should not be rusted.

The fence surrounding a public playground should be in good condition to prevent kids from running into surrounding traffic.

Surface materials on the playground should be maintained regularly so that the surfacing is loosely packed and covers all appropriate areas — especially the fall zones surrounding playground equipment.

Playground equipment should be made of durable materials that won't fall apart or worn down too much by the weather.

Check for objects (like hardware, S-shaped hooks, bolts, and sharp or unfinished edges) that stick out on equipment and could cut a child or cause clothing to become entangled.

All hardware on equipment should be secure, with no loose or broken parts. Plastic and wood should show no signs of weakening, and there should not be any splintered or rusted surfaces.

If the local playground has a sandbox, check for hazardous debris such as sharp sticks or broken glass, and be sure that the sand is free of bugs. Sandboxes should be covered overnight to prevent contamination from animals, such as cats.

Help keep your playground clean and safe by picking up trash, using the equipment properly, and reporting any problems to the city, town, or county parks department, school, or other organization that is responsible for the upkeep of the playground.

If a part seems broken, loose, or in need of other maintenance, designate it as off-limits immediately and report the problem to the appropriate authorities or pinch points that could pinch or crush a child's finger or hand.

Teaching Kids about Playground Safety

Safe playground equipment and adult supervision are extremely important, but it's only half of the equation: Kids must know how to be safe and act responsibly at the playground.

Teach your kids to:

- Never push or roughhouse while on jungle gyms, slides, seesaws, swings, and other equipment.
- Use equipment properly — slide feet first, don't climb outside guardrails, no standing on swings, etc.
- Always check to make sure no other kids are in the way if they're going to jump off equipment or slide, and land on both feet with their knees slightly bent.
- Leave bikes, backpacks, and bags away from the equipment and the play area so that no one trips over them.
- Always wear a helmet while bike riding, but take it off while on playground equipment.
- Never use playground equipment that's wet because moisture makes the surfaces slippery.
- Check playground equipment in the summertime. It can become uncomfortably or even dangerously hot, especially metal slides, handrails, and steps. So, use good judgment — if the equipment feels hot to the touch, it's probably not safe or fun to play on. Contact burns can occur within seconds.
- Wear clothes that do not have drawstrings or cords. Drawstrings, purses, and necklaces could get caught on equipment and accidentally strangle a child.
- Wear sunscreen when playing outside even on cloudy days to protect against sunburn.

Safe Equipment Guidelines

Because swings, slides, and climbing equipment are so different from one another, each requires a different set of safety considerations. And some kinds of equipment are not safe for playgrounds, no matter how careful kids are.

Swing Safety

Swings are the most frequent source of childhood injuries from moving equipment on a playground. But a few simple precautions can help keep kids safely swinging in the breeze:

Swings should be made of soft material such as rubber or plastic, not wood or metal.

Kids should always sit in the swing, not stand or kneel. They should hold on tightly with both hands while swinging, and when finished swinging, stop the swing completely before getting off.

Children should stay a safe distance from other kids on swings, being careful not to run or walk in front of or behind moving swings.

Kids should never ride with more than one child to a swing. Swings are designed to safely hold only one person.

Seesaw Safety

Because seesaw use requires cooperation between kids, they're generally not recommended for pre-schoolers unless the seesaw has a spring-centering device to prevent abrupt contact with the ground. Regardless of design, both seesaws and merry-go-rounds should be approached with caution.

Other safety tips to keep in mind:

- Seesaw seats are like swings: one child per seat. A child who is too light to seesaw with a partner should find a different partner — not add another child to his or her side of the seesaw.
- Kids should always sit facing one another, not turned around.
- Teach kids to hold on tightly with both hands while on a seesaw, not to touch the ground or push off with their hands, and to keep feet to the sides, out from underneath the seesaw.
- Kids should stand back from a seesaw when it's in use. They should never stand beneath a raised seesaw, stand and rock in the middle, or try to climb onto it while it's in motion.

Slide Safety

Slides are safe if kids are careful when using them. Guidelines to keep in mind:

Children should take one step at a time and hold onto the handrail when climbing the ladder to the top of the slide. They should not climb up the slide itself to get to the top.

Kids should always slide down feet first and sitting up, never head first on their back or stomach.

Only one child should be on the slide platform at a time, and kids shouldn't slide down in groups.

Kids should always check that the bottom of the slide is clear before sliding down. When they reach the bottom, they should get off and move away from the end of the slide so it's clear for other kids to slide down.

Climbing Equipment Safety

Climbing equipment comes in many shapes and sizes — including rock climbing walls, arches, and vertical and horizontal ladders. It's generally more challenging for kids than other kinds of playground equipment.

Be sure your kids are aware of a safe way down in case they can't complete the climb. The highest rates of injuries on public playgrounds are associated with climbing equipment, which is dangerous if not designed or used properly. Adult supervision is especially important for younger kids.

Climbing equipment can be used safely if kids are taught to use both hands and to stay well behind the person in front of them and beware of swinging feet. When they drop from the bars, kids should be able to jump down without hitting the equipment on the way down. Remind kids to have their knees bent and land on both feet.

Too many kids on the equipment at one time can be dangerous. Everyone should start on the same side of the equipment and move across it in the same direction.

When climbing down, kids should watch for those climbing up; they should never race across or try to reach for bars that are too far ahead.

Children younger than age 5 may not have the upper-body strength necessary for climbing and should only be allowed to climb on age-appropriate equipment. Pre-schoolers should only climb 5 feet high and school-age kids should only climb 7 feet high.

Track Ride Safety

Track rides are a form of upper-body equipment where kids hold on to a handle that slides along a track once they lift their feet. These rides require significant upper-body strength and are recommended for school-age kids and above.

- Track rides should not be included in play areas for toddlers and pre-schoolers.

- There should be no obstacles along the track path, especially in take-off and landing areas.
- If two track rides are next to each other, they should be spaced 4 feet apart, minimally.
- The handle should be between 64 inches and 78 inches from the surfacing.
- Nothing should be tied or attached to any part of the track ride.
- Rolling parts should be enclosed to avoid crush injuries.

Log Roll Safety

Log rolls require kids to grasp handles, then balance on top of the log as they spin it with their feet. This helps older kids to develop balance skills and increase strength.

- Log rolls are recommended for school aged-kids and above.
- All log rolls should have handholds to assist balance.
- The highest point of the log roll should be 18 inches above the protective surface.

Soft Contained Playgrounds

There are specific recommended safety checks for soft contained playgrounds:

- Make sure there are no tears or frays in the safety netting, cargo webbing, and ropes.
- The floor surface should be made of mats in good condition that are not torn and are placed tightly together.
- Look for the posted safety rules and size recommendations for the activity. Keep older kids away from areas designated for smaller children and vice versa.
- As in any other playground, kids should not wear clothing with loose strings, necklaces, or earrings.
- Many slides are contained in tubes, so a child going down will not see if there is anyone at the bottom of the slide. Kids should stay clear of the area at the bottom of slides and not climb up an unsafe Playground Equipment

These types of equipment are not safe for playgrounds:

- animal figure swings
- glider swings that hold more than one child at a time
- swinging ropes that can fray, unravel, or form a noose (any kind of rope attached to play equipment poses a strangulation hazard, so never let your child tie jump ropes or leashes onto the equipment)
- exercise rings (as used in gymnastics) and trapeze bars
- monkey bars
- trampolines

Parents should not place plastic climbing equipment indoors. Even carpet does not give enough protection from falls. This type of equipment is intended for outdoor use on safe surfaces.

Play is an important part of kids' physical, social, intellectual, and emotional development. Following these safety tips will help your kids play as safely as possible.de.