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Is Your Playground Safe – Does your Playground comply with SANS (South African National Standards).

Our children are one of our most valuable treasures in life, and their safety is always a priority and a paramount responsibility. Part of the safety is to ensure that your children play on play structures and matting that comply with the act.



The South African National Standards (SANS) 51176 – 1, 2, 3, 4, 5, 6, 7, 10, 11 and 51177 of 2010 (referred to as the act) which is available from the SABS website addressing the safety requirements for play structures and safety matting.

In a nut shell, all public playgrounds, schools, municipalities, entertainment centers, etc., where a 3rd party is involved, regardless of whether or not there is supervision, beneath all playground equipment with a free height fall of more than 600mm and/or equipment causing a forced movement on the body of the user (e.g.: swings, slides, rocking equipment, cable ways, carousels, etc.), there shall be an impact attenuating surfacing over the entire impact area. (Reference: SANS 1176-1. Page 36, Point: 4.2.8.5.2)

The act clearly states that not to do anything is not an option anymore. Surfaces that **do not comply** with the act are grass, artificial grass with or without sand and/or rubber infill (unless a rubber shock pad is installed underneath), cement / clay pavers, tar surfacing, plain natural surface, concrete slabs, etc.

Although there are various options, MasterFibre SA Playground Safety Matting has been proven to be the top of the range when it comes to safety surfacing for playground structures and surrounding areas. MasterFibre is virtually indestructible, offering an incredibly long-life span combined with little to no maintenance.



Common Playground Injuries

- Concussion and head injuries from a fall.
- Broken or sprained bone from a fall.
- Scrapes or bruises.
- Splinter from wooden equipment that is not well maintained.
- Swollen body parts or arms from swing sets.
- Friction burns.
- Bloody noses.

Trips and Falls: Some of the most serious, sometimes fatal injuries occur from falls to the playground surface. Children can fall from monkey bars and other climbing equipment, as well as tripping and falling over tree roots, stumps or rocks.

Playground Safety Standards

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 implementation of playground safety standards internationally has proven to reduce accidents and deaths by as much as 80%.

The South African Bureau of Standards (SABS) publishing playground safety standards for South Africa in 2010.

The South African National Standards include (SANS):

- South African National Standard - SANS 51176 parts 1,2,3,4,5,6,7,10 and 11
General requirements and test Methods for playground equipment
- South African National Standard - SANS 511
Surfacing requirements underneath playground equipment
- South African National Standard - SANS 54960
Inflatable amusement and play equipment - Safety requirements and test methods

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

Applying Laws

- 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.)

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

Table 4 – Examples of commonly used impact attenuating materials, depths and corresponding critical fall heights.			
Material ^a	Description	Minimum depth ^b	Critical fall height
	mm	mm	mm
Turf/topsoil			≤ 1000 ^d
Bark	20 to 80 grain size	200	≤ 2000
		300	≤ 3000
Woodchip	5 to 30 grain size	200	≤ 2000
		300	≤ 3000
Sand ^c	0.2 to 2 grain size	200	≤ 2000
		300	≤ 3000
Pea Gravel ^c	2 to 8 brain size	200	≤ 2000
		300	≤ 3000
Other materials and other depths	As tested to * HIC (see EN 1177) * Head Injury Criterion		Critical fall height as tested
^a Materials properly prepared for children’s playgrounds. ^b For loose particulate material, add 100 mm to the minimum depth to compensate for displacement (see 4.2.8.5.1) ^c No silty or clay particles. Rain size can be identified by use of sieve test, such as EN 933-1 ^d See NOTE 1 in 4.2.8.5.2			
Reference EN 11766-1: 2008, Page 37, Table 4			

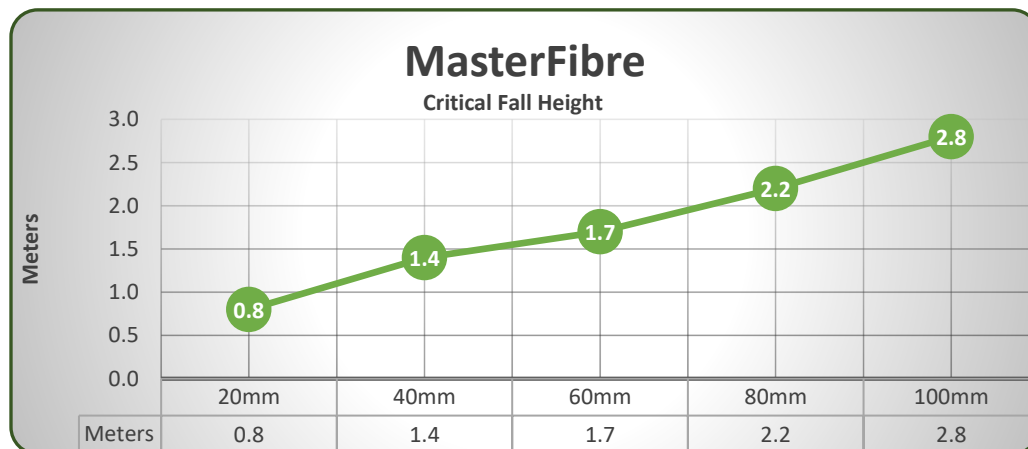
Playground Equipment Critical Fall Height

How deep should my surface be?

The surface under and around playground equipment can be a major factor in determining the injury-causing potential of a fall. It is self-evident that a fall onto a shock absorbing surface is less likely to cause a serious injury than a fall onto a hard surface. Because head impact injuries from a fall have the potential for being life threatening, the more shock absorbing a surface can be made, the more is the likelihood that the severity of the injury will be reduced. However, it should be recognized that all injuries due to falls cannot be prevented no matter what playground surfacing material is used.

The depth and area of the safety surface depends on the critical fall height of the playground equipment.

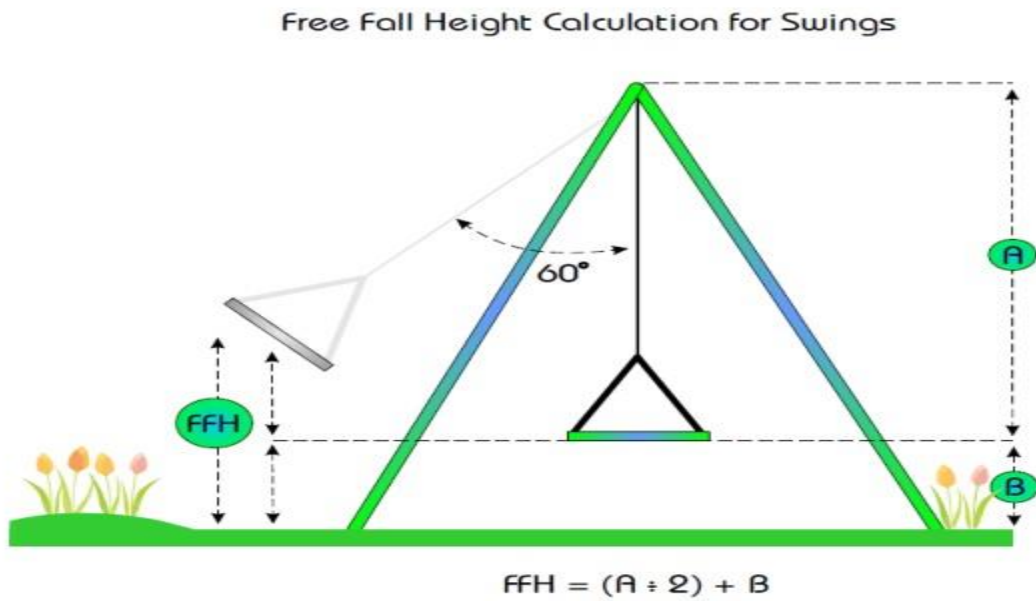
The diagram below gives the critical fall height and the minimum required safety surface thickness for **Masterfibre** as tested by independent laboratory as per SANS 551177 (Surfacing requirements underneath play equipment).



Disclaimer: The above specifications are derived from periodic tests taken on actual product from the manufacturing process. The data shown above represents the average values and/or performance calculated from these tests. Some variances are possible due to the use of recycled raw materials and common manufacturing tolerances. All users of the product despite our application examples should test for suitability of purpose prior to application. All orders for this product are subject to our standard Terms and Conditions of Sale.

Fall Height for Swings

The fall height for swings is measured from the centre of the stationary swing seat at 60 degrees. To calculate this, divide the chain length by 2 and add the distance from the seat to the ground (see image below)



Surfacing Area

The extent of surfacing required around play equipment is dictated by the height of a potential fall.

Stationary Equipment

Stationary play equipment with a Free Fall Height of 1.5m or less should have surfacing which extends at least 1.5m beyond the edges of the equipment. For equipment with a FFH of more than 1.5m, subtract 1.5 from the FFH and multiply the result by 0.667, then add back the 1.5m.

The table below demonstrates this principle:

Free Fall Height	Surface Distance
1.5m	1.50m
1.6m	1.56m
1.7m	1.63m
1.8m	1.70m
1.9m	1.76m
2.0m	1.83m
2.1m	1.90m
2.2m	1.96m
2.3m	2.03m
2.4m	2.10m
2.5m	2.16m
2.6m	2.23m
2.7m	2.30m
2.8m	2.37m
2.9m	2.43m
3.0m	2.50m

Having an adequate and appropriate playground surface, and maintaining it properly, are the most important things a playground owner/operator can do to minimize the severity of playground injuries.

The above information is designed to help you assess the depth and extent of your safety surfacing but please don't hesitate to contact us should you require any further advice or information.