

SOFT FALL AND PLAYGROUND REQUIREMENTS IN CHILDCARE

In industrial safety, there is a recognized hierarchy of hazard control measures, based on the principle that hazards should be removed by 'engineering out', and that personal protective equipment is a last line of defence.

Playgrounds present a different situation. Ideally, playgrounds should encourage development of gross and fine motor skills. Playgrounds should also present a stimulating play environment which presents children with manageable challenges, through which children can find and test their limits. To provide these challenges, a balance must be found between risk and safety.

Prior to 1996 and the introduction of Australian Standards AS/NZS 4422 and AS/4685, there were no Australian Standards or any other requirements for a safety surface to be installed or certified for playground equipment. Almost all local councils-Local Government Authorities (LGAs) installed their playground equipment items, such as swings, large metal slides, wooden plank see saws, monkey bars, and other equipment directly onto grass or dirt. Some LGAs installed equipment on an asphalt or concrete surface.

A playground injury which leaves a child with a permanent disability is not acceptable.

Playground designers must take every possible care to identify and eliminate unacceptable playground risks and reduce hazards. However, it should also be understood that children often lose interest in equipment which does not challenge them, and that children will experience minor injuries as they grow and learn, in playgrounds and away from them.

Materials such as sand and water which a child can manipulate and interact with maintain a child's interest because they provide a continuing challenge.

Although there will continue to be differing interpretations of the statistics on playground related injuries, it is true to say that unless climbable items of play equipment are entirely enclosed, children will continue to fall from them.

Over the last few years in Australia and New Zealand there has been an increased interest in the use of soft surfacing underneath and around playground equipment. This surfacing is variously known as soft fall, soft surfacing and under surfacing.

There is now widespread agreement that adequate soft fall is required underneath and around all playground equipment from which a user might fall, to reduce the effects of those falls an adequate soft fall surface is required.

As equipment height increases, additional protection is required, and should be provided by increased use of other protective measures such as platform guard railing and infill, or even enclosure.

Australian Standards AS/NZS 4422 and AS/4685.1 specify that an impact-absorbing surface is required for areas where falls from play equipment are possible. This surface is commonly referred to as soft fall.

Possible brain injury has been used as the criteria for several reasons. It is likely to be the worst-case outcome for a fall, as the effect may be permanent, and serious. A broken bone, however painful and distressing it might be to the sufferer, is likely to heal without long term ill-effect injuries.

A person can stand on the ground, trip, and break a bone, or fall from a great height and suffer no break.

For parents and childcare workers, even the possibility of a broken bone is an unacceptable risk, and it would certainly be preferable to eliminate long bone injuries resulting from playground accidents. Every effort should be made by playground designers to ensure that the playground and the equipment in it are as safe as possible, but it will not always be possible to provide managed challenge and, also ensure that all injuries are prevented.

However, adequate soft fall will minimize the incidence and severity of a head injury and will also reduce the possible occurrence of long bone injury.

Any playground design requires someone with a detailed knowledge of the content and application of the Australian Playground Standards. The current standard in Australia for playground equipment AS4685:2021 was introduced in 2004, and, updated in 2021

Loose materials or 'loose fill' includes materials made up of small particles like sand, woodchip, and mulches. One major benefit to "loose fill" materials is the relatively low cost, however the downside is that maintenance is required in the form of raking, cleaning, and topping up to ensure a consistent depth of at least 300mm or more depending on possible fall heights.

Solid materials, including rubber matting and wet pour rubber are the other popular choice for Australian playgrounds. These types of rubber surfaces tend to be more expensive but can exceed the lifespan of loose fill material without requiring the same maintenance or upkeep. If installing this sort of material, you should request a certificate of compliance with AS:4422 to ensure adequate impact absorption properties.

If using in a playground situation make sure to be guided by the Australian Standards for appropriate depth of Loose-fill surfaces (mulch), which is usually to maintain at a minimum depth of 300mm or more depending on possible fall heights.

All play equipment and fall zones should comply with all relevant Australian Standards including but not limited to AS/NZS 4685, 4422 and 4486.

Apart from adequate soft fall, another issue to be aware of with playground equipment is the possibility of body entrapment. This would include entrapment of the head and neck, clothing/hair, whole body, foot or leg, or finger entrapment.

Professionally designed playground equipment should be designed to minimise the possibility of body entrapment for children using the playground equipment under normal circumstances.

Sandpits are often provided in school playgrounds and childcare facilities. The soft sand in the sandpit is also attractive to nocturnal animals such as possums and feral cats. Sandpits should be completely covered at night to prevent nocturnal animals defecating in the sand. Regular raking and refilling of the sandpit, is also recommended.

A regular professional **workplace health & safety audit** conducted every two to three years at your school or childcare facility will assist you to recognise if your playground equipment and other sections of your centre are compliant with the current standards and requirements.



Photo 1 A playground area with bark soft fall. The soft fall material in this playground appears to be too thin to comply with current requirements. If a child were to fall from the playground equipment a possible broken bone or head injury could occur.



Photo 2 This area has a professionally placed synthetic soft fall ground surface in accordance with Australian Standards set out in AS/NZS 4422: and AS 4685.1.



Photo 3 This is an example of a synthetic soft fall. More expensive than sand or bark soft fall, but much longer lasting and easier to maintain. Unlike sand or bark, this surface does not require any raking and is unlikely to lift after wet weather.



Photo 4 A play area sandpit. All sandpits at childcare centres and schools should be covered at night to prevent nocturnal animals such as possums and feral cats defecating in them. Regular raking and refilling of the sand when required is also recommended as best practice.

REFERENCES

AS 4685.1:2021

Playground equipment and surfacing,

Part 1: General safety requirements and test methods

AS 4422:2016 CURRENT

Playground surfacing - Specifications, requirements, and test method

Kearnes, Michael **How Safe is Your Playground?**

Journal Article- Australian Parks and Leisure September 2008.