



Proudly promoting the value of play and supporting all Australians to play every day

Summary of Fall Zones and Soft Fall:

Free Height of Fall :

- 0 – 3 years - maximum free height of fall 1000mm.

Fall Zone :

- Free height of fall - less than or equal to 500mm = 1.5m fall zone (1500mm)
- Free height of fall 1.0m (1000mm) = 1.7m fall zone (1700mm)

Soft Fall:

1. Loose natural material :

a. Below 500mm free height of fall

The impact absorbing surface material does not need to be tested but it should have some impact absorption.

b. Above 500 mm free height of fall

200 mm loose material plus 50 mm for deterioration plus 20% for traffic (i.e. under a swing, at the foot of a slide etc.)

i.e. **300mm is recommended to be installed** so that the actual depth of the impact absorbing surface once settled on a daily basis is 250 mm.

2. Synthetic fixed materials :

- ##### **a. As per the playground equipment suppliers test results as detailed in AS/NZS 4422.**

<https://www.playaustralia.org.au/sites/default/files/LibraryDownloads/Planning%20for%20Safe%20Outdoor%20Play%20in%20Childrens%20Services.pdf>



PLAYGROUND HAZARDS

Most playground injuries can be prevented or their severity reduced by good planning, design and maintenance to avoid playground hazards.

It is important to note that the **Australian Standards** for playgrounds recognise that children need opportunities to experience risk and challenge in playgrounds and the standards focus on the elimination of hazards likely to cause serious life threatening injuries. The standards do not advocate risk-free playgrounds.

Free Height of Fall

Free height of fall refers to the distance between any platforms or hanging points on a playground item and the ground below. Risk or serious injury is minimized where fall heights are reduced.

The Australian Standards recommend a maximum free height of fall of 1800mm for supervised early childhood settings, 2200mm for upper body equipment and 3000mm in all other public or education settings.

Impact Area

The impact area is the area beneath and around playground equipment where a child might land if they fall. The Australian Standards specify the dimensions for impact areas dependent upon the height of the equipment and its use. For example, equipment that involves movement requires more space.



Undersurfacing

For any equipment that has a free height of fall more than 600mm, Australian Standards recommend that the fall zone under-surfacing must meet certain minimum impact attenuating requirements. There are two main types of materials that comply:

Loose-fill: suitable sand or mulch, that is well drained, regularly checked, and raked/aerated to avoid compaction and replenished as required to maintain minimum depth. Kidsafe WA recommends a minimum depth of 300mm to allow for displacement during typical use.

Synthetic/rubber: wet pour rubber or synthetic grass can also be used. Surfaces should be free of trip hazards and checked periodically to ensure there is no deterioration (eg. sub surface bumps or dips). You should also ask for a certificate of compliance with Australian Standards.





Guardrails and Barriers

Guardrails with vertical rails or solid barriers must be installed on platforms more than 600mm above the ground to prevent children from falling.

Entrapment & Pinch Points

There must be no gaps in which a child could become trapped, especially by the head, neck or chest. Gaps that might trap limbs, hands, fingers, hair and clothing should also be avoided.

Ensure there are no moving parts that might create crush or pinch points and that any timber is well maintained to avoid splits and splinters.

Age Appropriate Activities

Children of different ages (or the same age) can have very different physical skills. It is important to ensure your playground includes graduated levels of risk and challenge or that you provide different playground activities for younger and older children.

Space and the Flow of Play

Playgrounds typically involve lots of movement. Allow sufficient space for children to move freely about the playground and use the equipment safely. Another important point to consider is any potential clash between active and passive play pursuits. A good design and layout will ensure the flow of children moving through the space matches the different activities children might be participating in.

Trip Hazards

Keep paths and walkways even and clear of tree roots, stumps or rocks unless these are used to provide a balance activity and embedded within an appropriate space.

Avoid any edging or curbing that might create a trip hazard and ensure all concrete footings are well below the ground and any surfacing material.

Protrusions and Catch Points

Playground equipment should not contain any bolts, nails, screws or other elements that might cut, pierce or bruise; or act as a hook to entangle children's clothing or hair. Similarly, ensure any ropes are secured top and bottom so they cannot form a loop or noose.

Supervision

We encourage adult supervision that is appropriate for the age of the children and the activity they are participating in. Young children in particular need close supervision and guidance.

A great way to encourage supervision at your playground is by ensuring it is adult friendly. This means providing amenities such as shade, seating, water, toilets, safe access/pathways to or parking at the playground.

Another strategy is to maintain clear lines of sight, so adults can maintain discrete supervision where appropriate.

Maintenance

It is important that a regime of regular maintenance checks and annual comprehensive audit inspections is maintained. Similarly, it is important to keep accurate records of these checks and inspections and any repairs or modifications undertaken.

Equipment Not recommended

Plank swings, boat swings, roundabouts (except those with speed limiting devices) maypoles, are extremely hazardous because of their design and all have the potential to cause death or serious injury. Kidsafe recommends that if any of these items are present in your playground they should be immediately removed.

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For more information (08) 6244 4880
Child Safety Information Line 1800 802 244
Poisons Information Centre 13 11 26

Partner:



Government of Western Australia
Department of Health

www.kidsafewa.com.au



PLAYGROUND CHECKLIST

HOW SAFE IS YOUR PLAYGROUND?

EQUIPMENT

Fall Height & Fall Zones

YES NO

- Is the fall height less than 1.8m from all items of equipment? (Early Childhood) ☐ YES ☐ NO
- Is the fall height less than 3.0m from all items of equipment? (All other settings) ☐ YES ☐ NO
- Is there a minimum clearances around each item of equipment? ☐ YES ☐ NO

Under-surfacing

- Is there impact absorbing material under all items of equipment over 600mm in height? ☐ YES ☐ NO
- Is the under-surfacing well maintained? (200mm minimum deep loose fill material) ☐ YES ☐ NO

Design Hazards

- Is the play area free of head entrapment spaces – openings between 89mm – 230mm? (600mm or more off the ground) ☐ YES ☐ NO
- Is any moving equipment free from potential wedging or crushing points? ☐ YES ☐ NO
- Are there sturdy guard rails and handrails appropriate to a child's grip size? (16-45mm) ☐ YES ☐ NO
- Does the equipment design prevent possible climbing on the outside of the structure? ☐ YES ☐ NO

Maintenance

- Is the equipment frame stable and free from movement? ☐ YES ☐ NO
- Is the equipment free from rust, cracks or broken items? ☐ YES ☐ NO
- Are timber items on the equipment free from rotted or splintered wood? ☐ YES ☐ NO
- Is the area free from any protruding bolts or sharp edges on the equipment? ☐ YES ☐ NO
- Is the play space area free from loose stones or gravel? ☐ YES ☐ NO
- Is the play area free from trip hazards? ☐ YES ☐ NO
- Is the play area free from tree branches at eye level or exposed tree roots? ☐ YES ☐ NO

If you answered **NO** to any of these, the playground could be in need of attention!



OTHER CONSIDERATIONS

Age appropriate Design

Does the play area have separate areas for different age groups?
Is positive signage indicating the recommended age groups for equipment provided?

YES NO

<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

Location

Do you believe that the playground area is adequately separated from environmental hazards?
Do you believe that the playground is adequately separated from busy roadways?

<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

Shade

Are there shade structures or trees offering shade over the playground area?

<input type="checkbox"/>	<input type="checkbox"/>
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Supervision

Is there some place nearby for adults to sit and easily view children on the equipment?
Are there rules posted regarding expected behaviour?

<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

Onsite Facilities

Are there facilities such as toilets, drink fountains that are easily accessible from the play area?

<input type="checkbox"/>	<input type="checkbox"/>
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Is there appropriate access for users with disabilities?

<input type="checkbox"/>	<input type="checkbox"/>
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Play @ Kidsafe WA offers a variety of services aimed at improving the safety of WA Playgrounds.
Services include education workshops, advice and playground assessments.

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FENCING PLAYSPACES

Public Playspaces

A fence around the outdoor playspace may assist with the containment of children, preventing them running out into a hazard such as a busy road, and keeping animals and undesired traffic out.

While it is not required that a playground has a fence, the playgrounds that do have fences should follow guidelines and meet design requirements for playground safety and consider local government codes.

The need for fencing in public playspaces is determined by conducting a risk assessment to AS/NZS ISO 31000:2009. Some factors to consider:

- Is the playspace adjacent to a busy road?
- Is the playspace near a water way?
- Is a cycle way included in the playspace?
- Is a dog park located near the playspace?
- Is the design of the playspace for younger children?
- Are full or partial barriers required?
- Is there an opportunity to design garden beds/hedges as barriers?



Where it has been assessed that a fence is preferred around a public playspace, the fence is usually installed around the boundary of the playspace. This enables the children to use the playground equipment and the surrounding open space without fear of injury by misadventure outside the perimeter of the designated play area.

Designers should assess the most appropriate form of protection. A boundary can make a playground appear tidier and more defined, though this of course may not necessarily be a fence. Possible measures include simple one or two rail fences, bollards, landscape planting, garden beds, hedges, mounding, stone/brick wall or combinations of these.

It is important to consider that the selected fence type does not introduce an additional hazard. Kidsafe WA recommends the fence meets (as a minimum requirement) AS 2423:2002 Coated steel wire fencing products for terrestrial, aquatic and general use or AS 1926.1-2007/Amdt 1:2008 Swimming pool safety - Safety barriers for swimming pools.

Many fence contractors will be familiar with these standards. It is important to note that playground fencing is NOT the same as swimming pool fencing and may have a different opening threshold between vertical or horizontal members. Most fences are not designed to withstand the force of an automobile gone astray.

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Children's Services

Minimum height requirements for fencing in children's services is not defined in the Education and Care Services National Regulation 2011.

Kidsafe WA recommends a minimum height of 1200mm for perimeter fencing, however it is best to check with your local council for requirements for fencing including minimum and maximum height, type of fence, construction material and method.

Where fences are used to divide play areas or surrounding veranda's etc. the minimum height recommended is 900mm.

Avoid horizontal rails less than 700mm apart as rails may provide unintended access to the top rail. To prevent unintended access to the top of the fence by children, it is recommended to place items/equipment a minimum 1000mm from the fence.

Schools

Many WA schools have provided security fencing surrounding the perimeter of the school. Schools may have requirements for internal fences, mainly for playgrounds and/or sports pitch surrounds.

Schools should assess for the most appropriate type of fence for these areas and consider recommended fencing specifications on this fact sheet.



Recommended Fencing Specifications

Fence Height: It is recommended that the fence be at least 1200mm – 1800mm in height.

Fence Material: The fence can be constructed of a variety of materials such as timber, colourbond, metal bars or chain link. The chain-link versions can be covered with a polyvinyl coating that gives the chain link a softer feel. Select materials that are less likely to be climbed/scaled by children.

Gates: It is recommended that playground fence gates have self-closing hinges on the gate certified to AS 2820:1993. Gate units for private swimming pools. The latch must also automatically catch when the gate closes. Ensure that a gap of at least 12mm is present at each side when in use to avoid finger crush hazards. Monitor in ongoing maintenance inspections to ensure gates remain in sound working order.

Rails: Kidsafe WA recommends the lower horizontal rail be positioned at the bottom of the pickets or panel to reduce the likelihood of tunnelling under the fence and preventing unintended access to the top horizontal rail. Avoid a mid-horizontal rail where possible.

Top rail profile: A flat top rail is recommended. Loop top or rod top may potentially create a hanging point for a child's head between the pickets protruding above the top rail. For existing fences with protruding loops or rods at the top, ensure that climbing access is not provided for children to the top of the fence.



PLAYGROUND SURFACING

When is certified surfacing required?

All playground equipment with a fall height more than 600mm above playing surface level must have a certified impact absorbing surface beneath and around it to help minimise serious head or other injuries.

Impact absorbing surfaces must comply with AS 4422. Many impact absorbing materials have been tested for impact attenuation. No one material has proven to be the best solution for all occasions and decisions must be made depending on environmental conditions, cost and preference. All surfaces have advantages and disadvantages that need to be considered. The two main types of surfacing products are loose fill and solid materials.



Loose Fill Materials

Loose fill includes products such as bark mulch, wood chips, wood fibre, rubber mulch, and sand. The cushioning effect of loose fill is achieved by the trapping of air between particles. These products are generally less expensive than solid materials upon installation but require regular maintenance including top ups. However, if the cost of maintenance is measured in economic terms, solid materials may compare favourably over the lifespan of the surfacing.

Sand as playground surfacing is a popular alternative, however, must comply with AS 4422. Each sand type varies and may have differing depth requirements. Check with the supplier for documentation on specified depths for sand.

Solid Materials

Solid materials includes products such as synthetic grass, rubber tiles and wet pour rubber. The impact attenuating qualities of solid materials varies according to the thickness of the layer and the composition of the material.



Solid materials can work well in combination with loose fill products providing a fixed surface beneath heavy traffic areas such as under swings as pictured below and at the base of slides. This assists by reducing the required labour to replenish the loose fill.





Hot Surfaces

If a rubber surface product is desired select a lighter colour at the time of installation as this will absorb less heat.

However, be aware that light colours in large expanses can reflect glare and may make the area uncomfortable for users. Heat and glare issues can be minimised with the provision of shade structures or trees.

Before children enter the playspace, it is recommended to check the temperature of the playground surface. A thermometer will assist educators or playground providers to determine the temperature. Otherwise holding your hand just above the surface may help you determine if the playground surface is too hot for children to play on. If the surface temperature is 50 or more or has been determined to be too hot, it is recommended that children do not play on the surface.

Wetting the area with water may assist in cooling the surface temperature.

Design Tips

Avoid joins in wet pour rubber and synthetic grass in high traffic areas such as beneath swings and exit from slides. Where steps are surfaced with wet pour rubber, bevel back the step edge to allow a thicker wet pour rubber application to deter cracking.

Impact Testing

Kidsafe WA recommends that playground surfacing of solid materials is Impact tested every three years to ensure that the impact attenuating surface is compliant with AS 4422 and to monitor the performance of the playground surfacing.

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Surfacing Maintenance

Appropriate maintenance of playground surfacing will extend longevity of the materials and minimise risks to users. Follow manufacturer/supplier instructions for all materials within the playspace in ongoing maintenance inspections.

The depth of loose fill must be maintained at a minimum depth of 200mm at all times. Kidsafe WA recommends that a minimum depth of 300mm be maintained to allow for product loss and dispersion as children use the playspace.

Replenish loose fill when necessary. It is recommended that loose fill be turned with a rotary hoe at least annually.

Loose fill products are easily displaced and should be retained by a border or edge that is constructed with an appropriate material and does not present trip hazards or sharp protrusions. Check the border is secure and that timber components have not separated or split.

Regularly check solid surfaces for wear and tear. Use an outdoor blower/vacuum cleaner or stiff broom to remove leaves and unwanted material from the surface. An annual high-pressure wash, will continue to enhance the appearance and reduce any foliage stains. Attention to any surface damage is required immediately. If the surface is shaded and conditions are moist, fungal growth may occur. This can be easily rectified by washing with a mild detergent solution and stiff broom. Synthetic grass may require the topping up of infill sand or rubber. To keep the infill from compacting and to limit the fibres from "matting down", brush synthetic grass on a regular basis.

