



#PlayToday

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*promoting the value of play*

## SWINGS

### Placement

Play Australia recommends that swings should generally be placed towards the outside edge of a playspace and face either south or south-east.

Facing swings either south or south-east ensures that users are not forced to swing into the midday or afternoon sun, something that is particularly important for equipment that is often used for extended periods.

Locating swings towards the edge of a playspace helps to reduce the risk of collisions between users and children crossing into the swing's path.

Placing swings at the edge of a playspace facing in ensures that users can observe and feel connected to other activity happening elsewhere in the playspace. Carers supervising more than one child while also pushing a child on the swings can also more easily maintain eye contact with other children in their care if swing face towards the centre of the space.

In no instance should swings be placed directly on the most likely traffic route between two other items of equipment in the playspace unless formal or informal measures are taken to redirect users around the swinging zone, such as fencing or strategically placed garden beds.

As it is common for children to spend extended periods on swings, shade for both the user and for anyone pushing should be considered a priority wherever practical. Particularly in the southern parts of Australia, shade should ideally be located slightly offset towards the northern or north-western edges of the equipment to account for the angle of the sun, which is never completely overhead.

### Undersurfacing

Depressions in loose-fill under surfacing are extremely common below swings, often becoming muddy bogs in winter. As a result, many playspace managers prefer to install dedicated synthetic pads below their swing seats.

Note, however, that excessive displacement of mulch is often a symptom of swing seats being set too low, a problem that might be more cost effectively resolved by simply raising the height of the seats.

Narrow synthetic pads can also be a source of problems, particularly when installed too high. These include hazards associated with children coming to an abrupt halt if their feet come into contact with the pads at speed. Additionally, it is common to see unsightly trip hazards emerge as loose fill material around the edges of the pads are displaced over time.

One solution to these problems is for rubber pads to be installed under swings as a “second line of defence”, sitting 100mm or more below recommended loose-fill mulch height and covered by mulch. This ensures that problems with foot and leg impacts and trip hazards are minimised while also ensuring that impact absorbing qualities of the under surfacing are maintained even where the mulch is displaced through regular use.

### **Swing Frames**

Australian Standards (AS4685) specify that swings with more than two seats must be divided into bays so that there are no more than two seats per bay. This requirement is intended to discourage children from crossing the path of swings in use.

For this reason Play Australia recommends against the use of swings with a single central post and with no side posts as this type of swing design eliminates the benefits that edge posts provide in discouraging children from crossing a swing’s path. Similarly, due to their wider profile, A-frame-style frames are preferable to frames that use single uprights.

In order to maintain sufficient circulation space the entire area between the full width of the swing frame and the extent of the swing’s impact area is required to be kept clear of all obstacles that children could run into, trip on or fall on top of and thus be injured.

Swings should not be attached to other equipment unless specific measures are taken to segregate them from other activities, e.g. allowance of an additional 1.5m circulation space, barriers or enclosures.

If swings must be attached to other equipment the design must incorporate engineering measures to ensure that no unintended access to the swing frames or their top bars is created.

### **Ground Clearance**

The minimum ground clearance of a swing seat at rest is 350mm except for tyre swing seats where the minimum ground clearance at rest is 400mm. In Supervised Early Childhood Settings the minimum ground clearance is slightly lower at 300mm.

Note, however, that these are minimum requirements. For most situations Play Australia recommends that a minimum clearance of 450-500mm is more appropriate. The feet of even very young children can often touch under surfacing when seats are installed at minimum heights. This in turn can result in potential injuries, either due to children coming to an abrupt halt upon inadvertent impact with solid under surfacing, or due to excessive displacement of loose-fill under surfacing reducing mulch thickness below minimum levels.

As a general rule, if mulch needs to regularly be raked back into place under swings, or if rubber shows significant signs of premature wear and tear, the swing seats are set too low and should be re-set higher. Raising the height of swing seats can generally be achieved by removing a small number of links from the swing chains.

### **Minimum Impact Area (Fall Zone)**

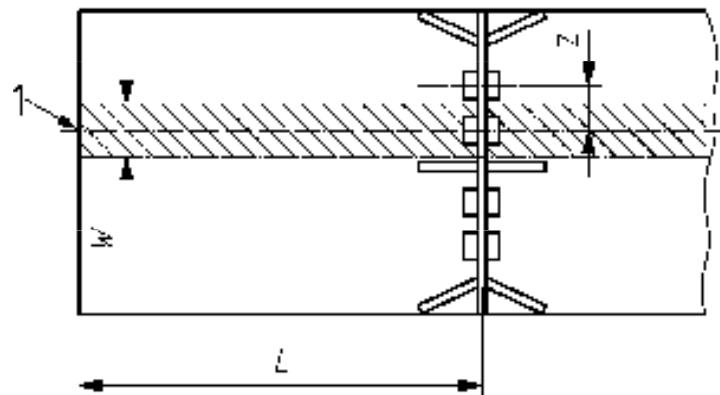
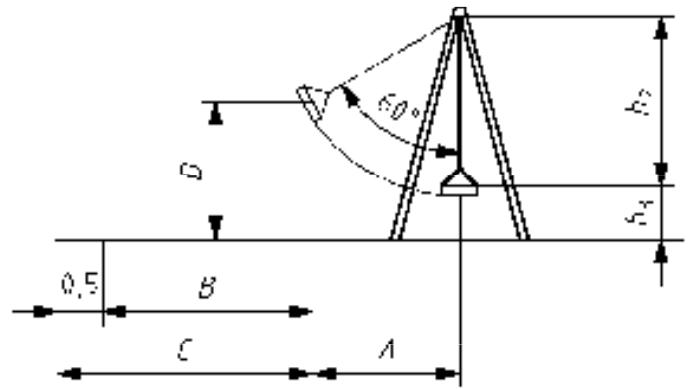
All swings need to have impact absorbing material for the full extent of the impact area, which must also be free of hard objects such as edging.

The impact area extends 2.25m beyond the point at which the middle of the seat is raised vertically by 60°, which can be calculated by  $0.867 \times$  the height from the top bar to the bottom of the swing seat. (This may be reduced to 1.75m beyond the 60° point when all-synthetic undersurfacing is used and in Supervised Early Childhood Services. Note, however that even in these circumstances the full 2.25m must still be kept free of obstacles.)

AS4685 does not require an impact area at the outsides of swing frames.

The impact areas of swings are not permitted to overlap with the impact areas of any other type of equipment.

There is no fall zone required outside the swing posts, however there should be 1.75m either side of the central point of the swing seat that has under surfacing on the ground.



#### Key

- A  $0,867 \times h$
- B 1,75 m for level impact absorbing surface (normally synthetic)
- C 2,25 m for contained impact absorbing surfaces (normally loose fill)
- D maximum free height of fall
- L A + B or A + C
- W width of the falling space
- Z distance from swing axis to swing axis
- $h_2$  length of swing suspension member
- $h_3$  height of seat
- 1 area to be covered by impact absorbing surface under each swing position

#### Means of Suspension

Fully rigid suspension members may not be used.