



#PlayToday

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ENTRAPMENT

AS4685:2014 *Playground equipment and surfacing* requires that equipment be constructed in a way that minimises the risk of entrapment.

Entrapment is described as a hazard in which a body or part of the body or clothing can become trapped, and where the user is not able to free him/herself and injury is caused by the entrapment. (AS4685:2014, 3.17)

Possible entrapment situations may involve:

- Whole body
- Head and neck (headfirst)
- Head and neck (feet first)
- Arms and hands
- Legs and feet
- Fingers
- Clothing
- Hair

Some common entrapment measures are:

chains	maximum opening of 8.6mm.
finger	no gaps between 8mm and 25mm more than 1000mm above ground level, or where there is 'forced movement'.
foot and leg	surfaces intended for walking or running must have no gaps greater than 30mm in the direction of travel
head/neck/torso	there should be no fully bound openings between 89mm and 230mm where the lower edge is at or more than 600mm above ground
whole body	tunnels have a minimum internal diameter of 750mm (500mm if open at both ends and \leq 2000mm long), tunnels with only one exit may be no more than 2000mm long and be flat or titled slightly upwards (\leq 5°) from the entrance.

The assessment of entrapment situations in accordance with standards is formally done with a range of relatively expensive probes and similar equipment. It is generally not necessary to purchase this equipment, however playground owners or managers are advised to seek an initial assessment of their site from an experienced safety assessor, particularly in the case of unusual, complex or custom playspaces.

Particular care should be exercised when assessing entrapments on and around equipment where there is 'forced movement'. Forced movement occurs where a user may find it difficult or impossible to stop part way through a typical arc of motion, such as due to gravity (eg slides, fireman's poles) or momentum (eg swings, carousels, spring rockers).

Generally, gaps that may change size or move while equipment is in use must comply with the minimum gap requirements for fixed equipment, as assessed for the full range of movement of the activity including when under load.

Playground equipment should not have any V-shapes $\geq 600\text{mm}$ above the ground, or openings that converge in the downward direction at an angle of less than 60° . Common areas where V-shape-type entrapments are often missed include at the bottom of stairs and handrails, and U-shaped gaps around slides bounded by the deck, the raised edges of the slide and adjacent barriers.

Clothing, cords and toggles can lodge in small gaps in sliding and other surfaces, or wrap around protrusions, causing injury if this brings the child to an unexpected and abrupt stop. Children should be encouraged to use hats with elasticised bands or with quick release clasps rather than fixed cords. Parents and carers should also consider the suitability of clothing with elaborate clasps, bands and similar attachments when dressing their child for active play.

For the purposes of protection against head and neck entrapment standards do not take into account children with an increased size of the head (e.g. hydrocephalus or Downs Syndrome) or children wearing helmets. Children should be advised to remove all helmets before interacting with playground equipment.

Supervised Early Childhood Services – Special Considerations

Consider possible entrapments when arranging moveable play equipment, such as a-frame trestles and ladders. Note that it is possible that entrapments may be created where two items of equipment are placed together or attached to each other, even where these would otherwise comply with playground standards when assessed separately.

The dimensions nominated for possible entrapment situations are based on a wide range of child ages. There is a large tolerance where assessing equipment to be used exclusively by younger children only, particularly with respect to head entrapment. (AS4685:2014, D.2.1.2)

If you are concerned about entrapment issues contact Play Australia for a discussion and advice.