

The certification of playground equipment and surfacing

By **David Eager**

Have you even been in a situation where the registered playground inspector is telling you one thing and the equipment supplier or surfacing supplier another and you are asking yourself whose advice to follow?

This brief article will attempt to answer this question.

The short answer to this question is “it is quite OK to make a playground safer than the Standard”. So if the inspector is telling you to do something that exceeds the manufacturer or supplier requirements and it is not reducing the play value I would strongly suggest that you take the Inspector’s advice. An example of this would be when the inspector recommends increasing the fall zone or free height of fall dimensions beyond those in the equipment supplier’s catalogue and by so doing increases margin of safety of the impact attenuating surface.

If an injury occurs in a playground the court will apply the Playground Standards as the minimum acceptable safety Standard. It is thus recommended that you comply with the minimum requirements that are contained within these Standards, namely: AS/NZS 4422:1996; AS/NZS 4486.1:1997; and AS 4685:2004 Part 1 to 6.

What are the practical implications of this? No matter what the equipment supplier or the surfacing supplier states in their documents you should comply with the technical requirements of these safety standards. I say should, because for most readers the playground standards are not mandatory standards. You can choose to comply or not to comply, but should an accident occur the court will use these standards as the minimum safety requirement when apportioning blame and handing down damages. If the playground is a Supervised Early Childhood Setting these standards are law and you must comply with all the technical requirements.



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It is also important to ensure that the Inspector is at arms length from the equipment supplier or surfacing supplier. This is commonly referred to as ‘Third Party or Independent Certification’. Using an independent inspector reduces the likelihood of any conflicts of interest.

You also need to verify the authenticity of the equipment supplier and surfacing supplier’s certification. Sometimes this can be quite difficult. The first place to start is by requesting copies of the compliance certification and supporting documentation. The Standard states that the manufacturer/supplier must provide this so you are not asking for anything extraordinary by making this request. Should the manufacturer/supplier be unable or unwilling, by definition they are no longer complying with the playground standards. You should be asking the question, why are they unwilling to provide this certification? Is there a message in this bottle?

Why do you need to check the equipment supplier and surfacing supplier’s certification? Before you purchase or install equipment it is important to know that what you are purchasing is fit to be used for its intended purpose. Does the play equipment have sufficient play value for the intended age range? Have all the hazards been removed, particularly the hazards that are not obvious to children at play. Have all the whole body, head, neck, torso, hair, clothing strangulation,

leg, foot, hand and finger entrapments been removed? Is the free space sufficient? Is there any unintended access? Are all the hazard reduction mechanisms sufficient? Is the playground equipment structural integrity adequate?

Hazard reduction commonly includes the provision of an impact attenuating surface that is of sufficient area and performance to limit the likelihood and severity of injuries. All equipment must have a certificate specifying the free height of fall and the fall zone when installed in accordance with the manufacturer’s instructions.

The free height of fall is measured from the intended body support. In the playground Standard the free height of fall is defined as “The greatest vertical distance between a part of the equipment that is a point of an intended body support and the ground surface or part of equipment beneath”. There are three examples of intended body support given in the Standard, namely: standing, sitting and hanging. There are also other forms of intended body support that are not detailed in the Standard such as climbing and spinning. Climbing is when body

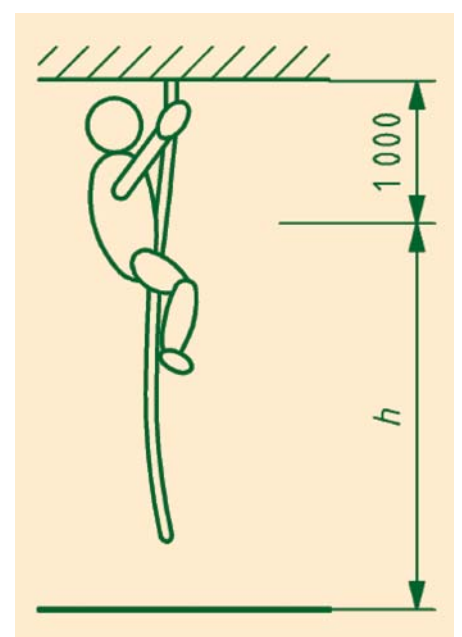


Figure 1. Climbing free height of fall, h .

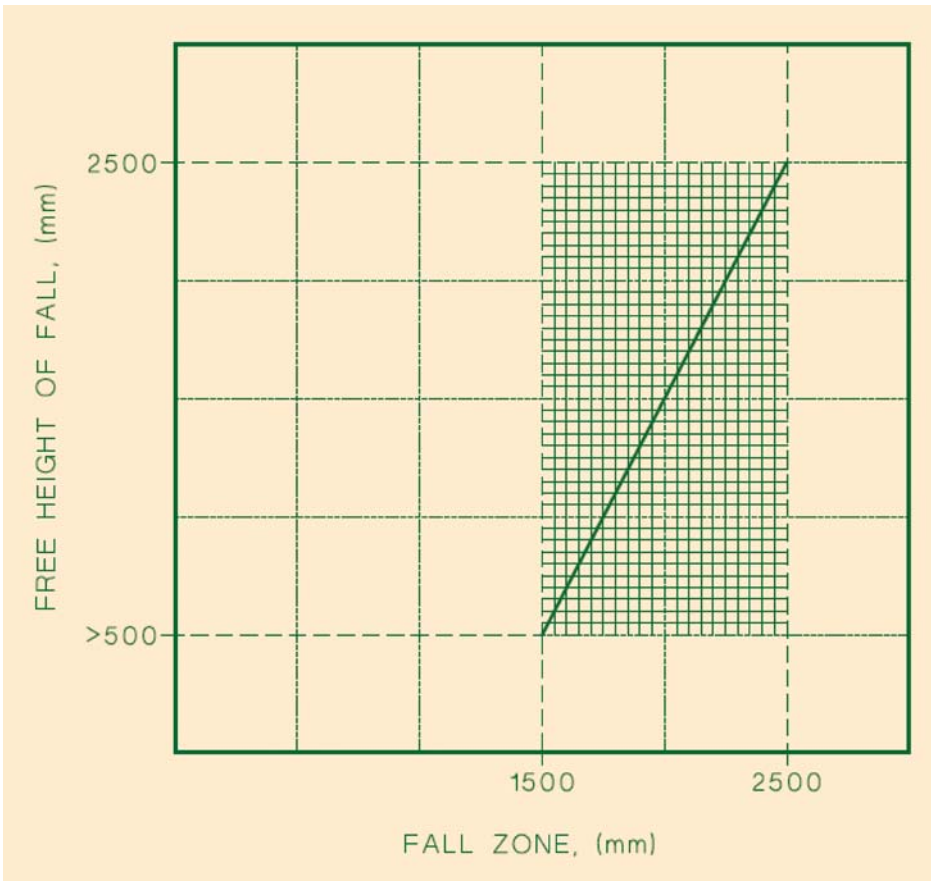


Figure 2. Minimum extent of fall zone.

support is a combination of feet/legs and hands such as climbing ropes (see Figure 1) or sliding poles. Spinning is when the primary body support is by two hands with secondary support provided by other parts of the body such as feet/legs in the case of a spinning pole. Thus the free height of fall for a spinning pole is not measured from the ground to the platform, but from the ground to the handgrip which for most manufacturers is approximately 1.5m.

For some items of play equipment the free height of fall is deemed. This is common practice when the equipment has forced movement. Examples of free height of fall deeming include: the slide runout is deemed to have a 1.0m free height of fall; and all carousels are deemed to have a 2.0m free height of fall.

The fall zone is normally calculated by obtaining the free height of fall and applying this measurement to the graph that is contained in AS 4685.1:2004 (see Figure 2). In all situations this graph specifies the absolute minimum fall zone distance. For forced movement equipment, where the likelihood and/or severity of an injury is greater than non-forced movement equipment, an

additional fall zone distance associated with forced movement must be added to the distance calculated using the Minimum Extent of Fall Zone graph. For example for the slide runout where maximum free height of fall is limited to a height of 350mm the fall zone is a minimum of 2.0m measured along the centre-line from the end of the slide.

So for a spinning pole, what is the fall zone? Let's assume that the free height of fall is 1.5m and the ejection velocity of the child is say 5 m/s. From Figure 2 for non forced movement equipment the fall zone should be a minimum of 2.0m, and for a 5 m/s impact velocity the equivalent fall height is 1.25m. Should we add these distances? I would suggest no, but we should ensure that a 2.0m fall zone with impact attenuating surfacing with a critical fall height of no less than 1.5m is provided and that no hard or protruding objects such as brick garden beds or benches are installed in the 3.0m circulation zone.

The Minimum Extent of Fall Zone graph is indeterminate for heights between 0mm and 500mm. What does this mean? It means that the fall zone distances in this range need to be deter-

mined on a case by case basis after conducting a risk assessment. In most case the fall zone distance will be 1.5m. However, for 'non moving' and 'not used for climbing' situations the Standard allows the fall zone to be 0.0m.

It is also important to verify the authenticity and accuracy of the Equipment Supplier and Surfacing Supplier's Certification. Why is this important? There are a number of reasons including: believe it or not there are suppliers who will swear on a stack of Bibles that white is black and black is white; certifiers are human and we all know that humans are prone to make mistakes; suppliers have a vested interest in portraying their equipment and surfacing in the best possible light, even when this is done subconsciously with all the best intentions in the world. ▲

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