Outdoor Fitness Standard

AS 16639:2021

A brief overview

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Outdoor Exercise Equipment

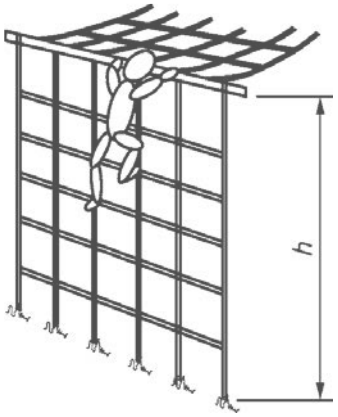
AS 16630:2021

Permanently installed outdoor fitness equipment – Safety requirements and test methods

Outdoor Exercise Equipment

Free Height of Fall (FHoF)

The FHoFis determined as the point of primary body support (i.e. foot or seat position, or hand hold if hand support only is used.



Fall height = *h*

<u>Standing, sitting or climbing</u>

The FHoF is measured as the point of foot support, seat support, or highest point where climbing is encouraged.

<u>Hanging</u>

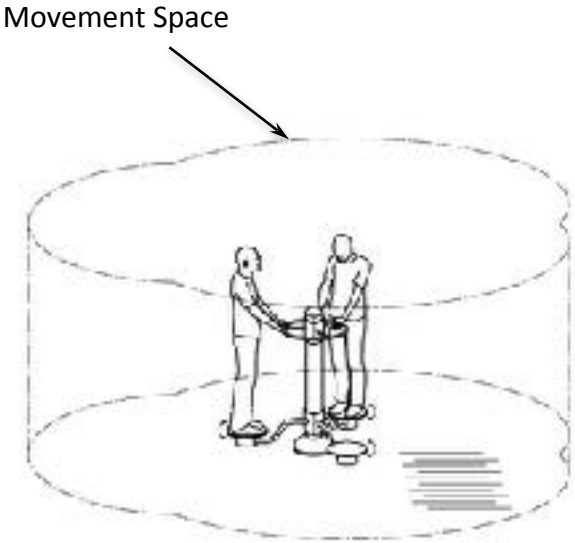
The FHoF for items where body support is provided by the hands only is measured as the hand support, minus 1.0 m.

Fall height = *h* – 1.0 m

Outdoor Exercise Equipment

Movement Space

‘Movement space’ (same as ‘falling space’ in the playground Standards) is the space necessary for safe use of the equipment.



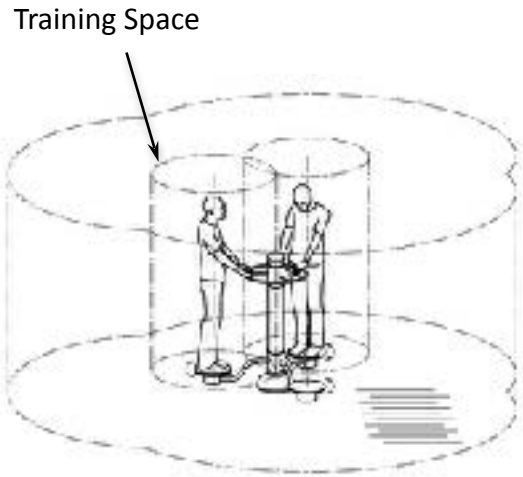
The ‘movement space’ calculated as follows:

- FHoF less than 1.5 m, the ‘movement space’ extends 1.5 m.
- FHoF between 1.5 m and 3.0 m, the ‘movement space’ is calculated as 2/3 of the fall height + 0.5 m.

Outdoor Exercise Equipment

Training Space

Each item of equipment has its own ‘training space’ which is defined as the space in, above or around the fitness equipment, which the users of the equipment need to perform their exercises.

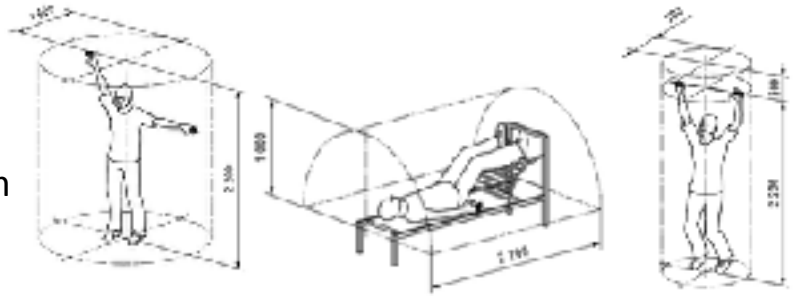


This space has the dimensions of a circular cylinder around the user, over the range of movement.

The ‘training space of individual items is not permitted to overlap, with the exception of equipment with multiple user stations, provided hazardous situations are not created.

Dimensions of the ‘training space’

Where the user is standing, sitting or lying, this circular cylinder extends 1.0 m in radius from the centreline of the user and 2.2 m high (or 1.5 m high in the case of sitting).



Where the user is hanging, this circular cylinder extends 0.5 m in radius from the centreline of the user and 300 mm above the grip position.

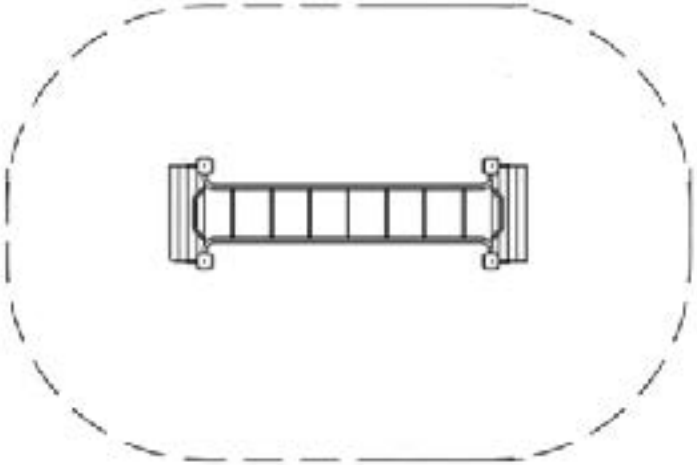
Outdoor Exercise Equipment

Impact attenuated surfacing

Impact attenuated surfacing is required when the free height of fall exceeds 1.0 m (or where forced movement exists), and extends across the extent of the ‘movement space’.

(Forced movement exists where the user can no longer stop in a self-determined way, by using their own strength, after the start of the movement.)

As detailed under the heading ‘Free Height of Fall’, items where body support if provided by the hands only (hanging), have the FHoF measured as the point of hand support minus 1.0 m.



While impact surfacing is not required where the FHoF is less than 1.0 m, the surface should not contain any hard or sharp-edged objects that could be fallen on from a height of more than 600 mm (excluding the ground surface itself).

Outdoor Exercise Equipment

Distance between moving parts

The distance between moving parts and adjacent moving or fixed parts must be:

< 8mm or ≥ 25mm if only fingers are at risk; or

< 8mm or ≥ 60mm if other body parts are at risk.

The ground clearance below moving items must be:

≥ 60mm or;

≥ 110mm in the case of vertically moving parts outside the user's field of view.

There must be no crushing or shearing points. End stops must be dampened.

Ranges of movement

- Rotating user stations must have a maximum rotation of 105^{o} to the left and right from the centreline of the body.
- Swinging components must be limited in their range of movement to 55^{o} in each directions from the vertical.

Outdoor Exercise Equipment

Surface Finishes and Edges

Surfaces & accessible materials

If the equipment is provide with a tread surface, this should be slip resistant and designed so that liquid can drain off.

Tread surfaces designed for foot support shall be at least 100mm wide and 3000mm long. They shall have a raised edge of at least 10mm, on the front and at least 2 other sides, covering at least 75% of the sides. (This requirement is not applicable to rotary discs with a diameter of at least 320mm.

Corners & exposed edges

Corners & edges withing the training space are required to have a radius of at least 3mm.

Protrusions

Protruding bolt threads, etc. should be covered (e.g. with dome nuts).

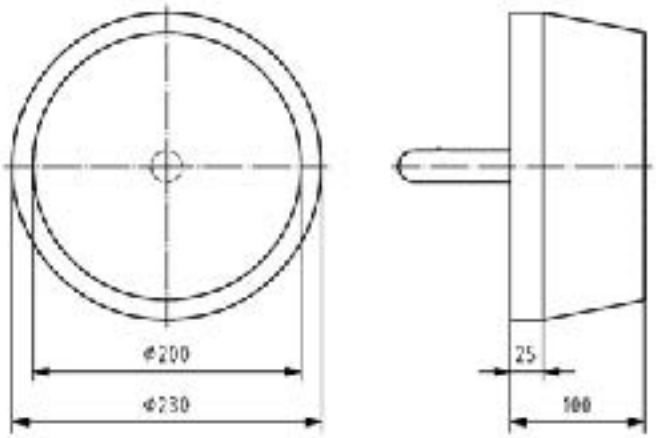
Outdoor Exercise Equipment

Entrapments of the head and neck

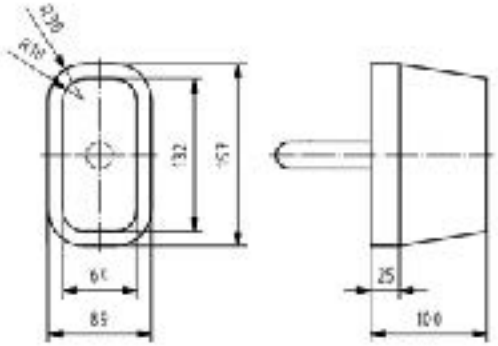
Completely bound openings

Completely bound openings with a lower edge more than 600mm above the impact area need to meet the following size requirements:

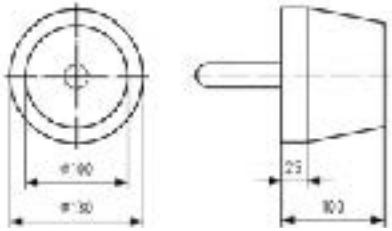
Any openings that allow the passage of the torso probe (89 mm x 157 mm) or the small head probe (130 mm diameter), need to be large enough to allow passage of the large head probe (230mm diameter).



Large Head Probe



Torso Probe



Small Head Probe

Outdoor Exercise Equipment

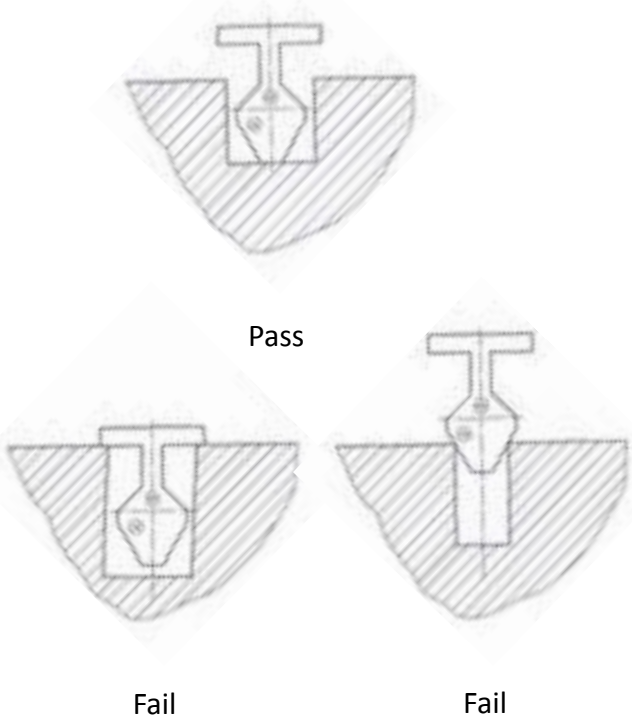
Entrapments of the head and neck

<u>Partially bound or V-shaped openings</u>

Partially bound openings that are more than 600 mm above the impact surface and greater than 45 mm in depth should comply with one of the following:

- the width of the opening should be less than 45 mm (to prevent possible insertion of the neck); or
- the width of the opening should be greater than 155 mm if the depth of the opening is less than 265 mm on both sides; or
- the width of the opening should be greater than 230 mm if the depth of the opening is greater than 265 mm.

V-shaped openings should not converge downwardly at an angle of less than 60º.



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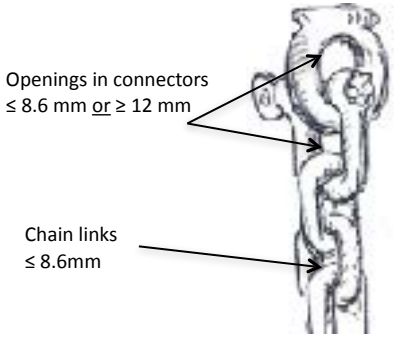
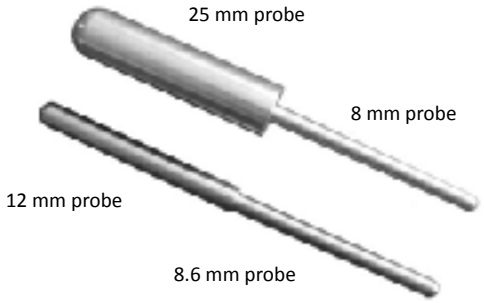
Entrapment of the fingers

Openings that allow passage of the 25 mm diameter probe must not allow passage of the 8 mm probe.

Chains shall have a maximum opening of 8.6 mm in any one direction, except where connections are made, where the maximum opening must be less than 8.6 mm or greater than 12 mm.

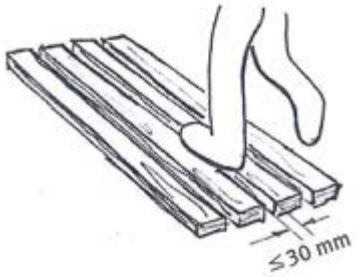




Entrapment of the foot & leg

Surfaces intended for running/walking shall not contain gaps, openings or projecting parts which may cause unexpected foot or leg entrapment.

Gaps in the main direction of travel shall not be greater than 30 mm when measured across the direction of travel.



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Grip & Grasp

Items intended for grip (when support of full body weight is required) shall have a cross-section of between 16 mm and 45 mm when measured in any direction.

Items intended for grasp shall have a cross-section with a maximum width of 80 mm.

Grip

Grasp