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Draft for Public Comment Australian Standard

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FOR COMMENT:

Swimming pool safety
Part 1: Safety barriers for swimming pools
(Revision of AS 1926.1-1993)



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The committee responsible for the issue of this draft comprised representatives of organizations interested in the subject matter of the proposed Standard. These organizations are listed on the inside back cover.

Comments are invited on the technical content, wording and general arrangement of the draft.

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When completing the comment form ensure that the number of this draft, your name and organization (if applicable) is recorded. Please place relevant clause numbers beside each comment.

Editorial matters (i.e. spelling, punctuation, grammar etc.) will be corrected before final publication.

The coordination of the requirements of this draft with those of any related Standards is of particular importance and you are invited to point out any areas where this may be necessary.

Please provide supporting reasons and suggested wording for each comment. Where you consider that specific content is too simplistic, too complex or too detailed please provide an alternative.

If the draft is acceptable without change, an acknowledgment to this effect would be appreciated.

When completed, this form should be returned to the Projects Manager, **Adrian La Manna** via email to adrian.lamanna@standards.org.au.

Normally no acknowledgment of comment is sent. All comments received electronically by the due date will be put before the relevant drafting committee. Because Standards committees operate electronically we cannot guarantee that comments submitted in hard copy will be considered along with those submitted electronically. Where appropriate, changes will be incorporated before the Standard is formally approved.

If you know of other persons or organizations that may wish to comment on this draft Standard, could you please advise them of its availability. Further copies of the draft are available from the Customer Service Centre listed below and from our website at <http://www.standards.com.au/>.

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Draft for Public Comment

STANDARDS AUSTRALIA

Committee CS-034—Safety of private swimming pools

DRAFT

Australian Standard

Swimming pool safety

Part 1: Safety barriers for swimming pools

(Revision of AS 1926.1-1993)

(To be AS 1926.1—200X)

This draft has been prepared by committee CS-034 to issue for Public Comment.

RECORD OF JUSTIFICATION FOR MAJOR CHANGES MADE IN THIS REVISION

This table is an outline of the major changes that have occurred in the revision of this Standard

Item	Clause	Clause title	Nature of change	Reason for change	Possible Implications
1	Title		Change use of the word fence to barrier	Use of the word fence in title is misleading as it is not the only element used in pool fencing	Clarity to user
2	Generic referencing of fencing	General	Change generic referencing of fencing to barrier	Consistency	Clarity to user
3	Clause 1.1	Notes	Note 1 delete	Note 1 is unnecessary as the referenced document is outlined elsewhere in the standard	Clarity to user
4	Clause 1.1	New Note	Note inserted to address access for people with disabilities	In line with the provisions for the Disability Discrimination Act	Clarity to user
5	Clause 1.3.5	Gate	Definition extended to clarify what constitutes a gate as opposed to a doorset.	At present the definitions of what constitutes a child resistant doorset as opposed to a gate are not mutually exclusive	Clarity to user

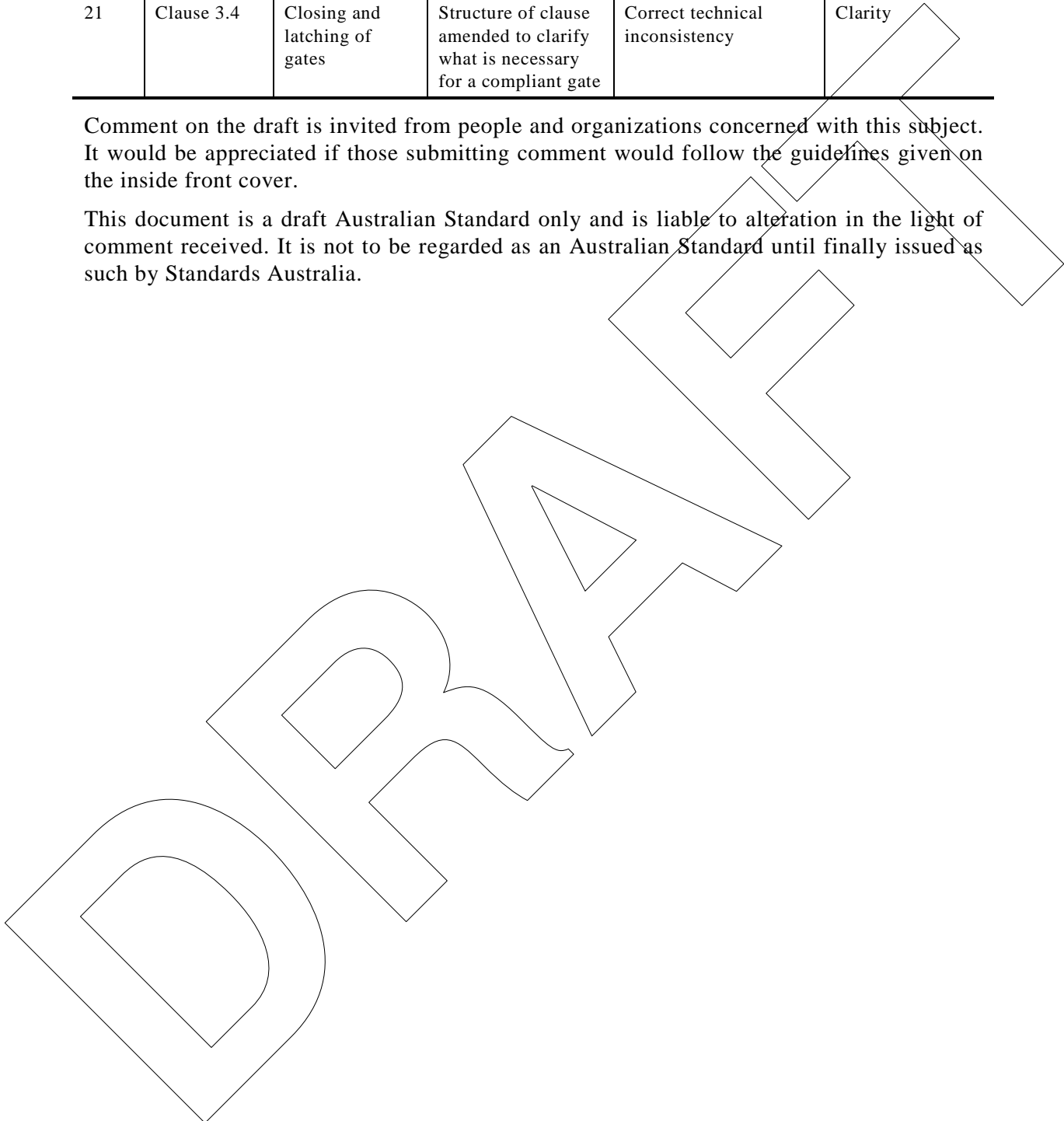
6	Clause 1.3	New Definition	Define pool area	To assist in clarifying Clause 2.9 on balconies over pool areas	Clarity to user
7	Clause 1.3	New Definition	Define finished ground level	To correct previous implementation problems	Clarity to user
8	Section 2	Design and construction of elements of a barrier	Restructure Clauses and framework	Feedback from users and committee has indicated that this Section is not user friendly due to the mix of design and construction requirements.	Increased usability
9	Clause 2.3.1	General	The quadrant used to determine fencing height (clear span radii) changed from 1.2m to 900 mm, provided that the quadrant is measured from the top of the fence.	The empirical data regarding child drowning shows that drowning occurring from a child climbing unaided over a fence is quite low.	Assists in the implementation to existing sites Reflects the current shrinking size of the typical residential property
10	Clause 2.3.2	Perforated material or mesh	Perforated material or mesh fencing height change from 2.4 m with crank to 1.8 m no crank	In line with general fencing requirements used on construction sites Bipartisan approval from safety and industry representatives The empirical data regarding child drowning shows that drowning occurring from a child climbing unaided over a fence is quite low.	A possible impact of this change could be a small reduction in material costs.
11	Clause 2.3.2	Perforated material or mesh	The maximum measurement for perforated material or mesh apertures changed from 13 mm to 10 mm	This is to be consistent with measurement requirements for spacing between palings for fences. The spacing being no more than 10 mm apart. Bipartisan approval from safety and industry representatives	Clarity for user
12	Figure 2.2	Perpendicular fencing dimensions on sloping ground	Added hinges on ends of 900 mm measurement for fence.	Figure causes confusion	Remove confusion

13	Figure 2.3 from previous edition	Cranked chain wire or mesh fencing materials having apertures greater than 13 mm but less than 100 mm	Deleted	Consistent with revision, the figure is no longer necessary, as no crank on such a fence is prescribed	Clarity
14	Figure 2.3	Spacing of accessible horizontal members, or projections or indentations	(b) Have extension lines corrected to top of rails and contract distance between rails (c) Add spacing between rails and indicate measurement 0 - 100mm	Correct and make consistent Clarity	Clarity for the user
15	Clause 2.5	New sub clause 'Operation of gate' inserted	New sub clause inserted regarding the operation of a gate	Clarity	Remove confusion
16	Figure 2.5 (e)	Latch shielding for gates of open construction	Slightly amended to reflect the intended positioning of the latch.	Clarity	Minor
17	Clause 2.6 Figure 2.6	Retaining wall or other such barrier	The Clause has been split into two sub clauses one for the high side of the pool and the other for the low side of the pool. The effective height of a barrier on the low side of the pool has been reduced from 2.4 m to meet requirements in Clause 2.3.1.	Remove confusion No reduction in safety is foreseen given the nature of the barrier on this side of the pool.	Clarity
18	New sub clause 2.6.3 inserted	New sub clause 2.6.3 inserted regarding permanent bodies of water	To address present concerns regarding permanent bodies of water and the relevance as a pool barrier	User need	Remove confusion
19	Clause 2.14	Child resistant doorsets	Delete Note 1 from previous edition Note regarding direct access via child resistant doorsets	Note is no longer seen as relevant as sliding doors now can be fitted with commercially available self-closing mechanisms. UNDECIDED STATUS!	Remove confusion

20	Clause 2.9 Figure 2.8 (a) and (b)	Balcony	The clause and figure were revised to address concerns regarding pool area relative to the balcony	Remove confusion regarding measuring the effective height of a balcony and its projection regarding the pool area.	Clarity
21	Clause 3.4	Closing and latching of gates	Structure of clause amended to clarify what is necessary for a compliant gate	Correct technical inconsistency	Clarity

Comment on the draft is invited from people and organizations concerned with this subject. It would be appreciated if those submitting comment would follow the guidelines given on the inside front cover.

This document is a draft Australian Standard only and is liable to alteration in the light of comment received. It is not to be regarded as an Australian Standard until finally issued as such by Standards Australia.



PREFACE

This Standard was prepared by the Standards Australia Committee on Safety of Private Swimming Pools to supersede [AS 1926.1—1993](#), Fences and gates for private swimming pools.

This Standard is part of a series dealing with barriers, location of barriers and water recirculation and filtration systems.

The series of Standards is as follows:

AS

1926	Swimming pool safety
1926.1	Part 1 Fencing for swimming pools (this Standard)
1926.2	Part 2 Location of fencing for private swimming pools
1926.3	Part 3 Water recirculation and filtration systems

This edition incorporates the following major changes from the previous standard:

- (a) Correction and clarification of some inconsistencies.
- (b) Changes to the effective height of a fence and other barrier measurements.
- (c) Additional requirements for permanent bodies of water.

This Standard establishes safety requirements for design, construction and performance of barriers, windows and doorsets for swimming pools of the types normally installed for private use; however it is also applicable for public use if consideration is taken of the differing dynamics of public swimming pools to private swimming pools.

Statistical evidence shows that the majority of drownings in private swimming pools involve children under five years of age. For that reason, the requirements established by the Standard are directed at obtaining a barrier that will make it difficult for a young child to gain access to a pool area, whether under, over or through the barrier.

It should be noted that the provisions of this Standard relate to barriers that is intended to be child resistant but not childproof, as effectiveness of the barrier is very much dependent on its location and installation.

The requirements are established with the intention of leaving a high degree of flexibility to the consumer in the choice of fence, desirable aesthetics and cost.

Requirements for the effective use of barriers in protecting children from pool hazards are given in [AS 1926.2](#). A Standard for gate units for private swimming pools is set out in [AS 2820](#), which is intended for use by manufacturers who are seeking certification that their products comply with the Standard.

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STANDARDS AUSTRALIA

Australian Standard Swimming pool safety

Part 1: Safety barriers for swimming pools

1.1 SCOPE

This Standard specifies requirements for the design, construction and performance of fences, gates, retaining walls, windows, doorsets and balconies intended to form a barrier that will restrict the access of young children to swimming pools.

NOTES:

- 1 Public swimming pools have different human dynamics, such as access for people with disabilities, increased gate usage, crowd behaviour and supervision, and the duplication of the requirements of this Standard may not always be appropriate.
- 2 Appendix E gives a broad guide to some of the key construction criteria which needs to be met by some of the more common types of fencing, in order to comply with the requirements of this Standard.

1.2 REFERENCED DOCUMENTS

The following document is referred to in this Standard:

AS
2820 Gate units for private swimming pools

1.3 DEFINITIONS

For the purpose of this Standard, the definitions below apply.

1.3.1 Child-resistant doorset

Comprises a door, door frame, self-closing device and self-latching device, that is designed to provide an access way to the swimming pool from a building.

1.3.2 Barrier

The assembly of components natural or otherwise, which form the intended barrier to the pool. The barrier includes items such as posts and panels, gates and doorsets constructed or natural walls, sides of buildings, child-resistant windows, balustrades on a balcony, where they form part of the intended barrier.

1.3.3 Fencing

A barrier comprising a fence and associated gate or gates.

1.3.4 Fencing height

The height perpendicular to the finished ground level at any point along the length of the fencing, measured on the outside of the fencing (see Figure 2.1).

1.3.5 Gate

Any portion of the fencing other than a child-resistant doorset that is designed to provide an access way through the fence. A gate is not designed to provide an access way to the swimming pool from a building.

1.3.6 Inside of the fencing

That side of a fence or gate which faces the pool area.

1.3.7 Outside of the fencing

That side of a fence or gate which faces away from the pool area.

1.3.8 Swimming pool

Any excavation or structure containing water to a depth greater than 300 mm and used primarily for swimming, wading, paddling or the like, including a bathing or wading pool.

NOTE: The definition of a swimming pool may vary from state to state. Refer to the appropriate regulatory authority.

1.3.9 Young child

A child under the age of five years.

1.3.10 Pool Area

The area that surrounds the pool that is separated from the rest of the allotment by a safety barrier.

NOTE: The pool area may be defined differently by regulating authorities.

1.3.11 Finished ground level

A permanent stable surface

1.3.12 Arc of operation

The unaided movement of a gate, covering its operation area for access to or from the pool area.

SECTION 2 DESIGN AND CONSTRUCTION OF ELEMENTS OF A BARRIER

2.1 GENERAL

A barrier shall be designed and constructed so that at any point the outside of the barrier will restrict access from young children.

The barrier shall be a permanent structure.

2.2 MATERIALS AND FINISH

Barriers may be constructed from any type of material, provided that the finished barrier complies with the requirements of the Standard.

The barrier shall be free of sharp edges, sharp projections and similar hazards.

2.3 FENCING

2.3.1 General

The effective fencing height shall be not less than 1.2 m (see Figures 2.1 and 2.2).

Consider options of 1.2 m fence with all requirements or 1.8 m fence subject to quadrant requirements.

The height shall be considered to be effective if a quadrant of radius 900 mm, located as shown in Figure 2.1, provides a clear span of 900 mm to finished ground level, or to any projections from, or weight bearing objects on, the ground, except for objects non climbable by a young child which are able to be positioned within the 900 mm radius.

2.3.2 Perforated material or mesh

Fencing using perforated materials or mesh with apertures not greater than 10 mm, shall have an effective fencing height not less than 1.2 m.

Fencing using perforated material or mesh with apertures greater than 10 mm but not greater than 100 mm shall have an effective fencing height of not less than 1.8 m.

Perforated material with apertures greater than 100 mm shall not be used.

Fencing using mesh shall include a strainer wire or rail at the top and the bottom of the fencing.

The bottom of the fencing shall be at or below the finished ground level.

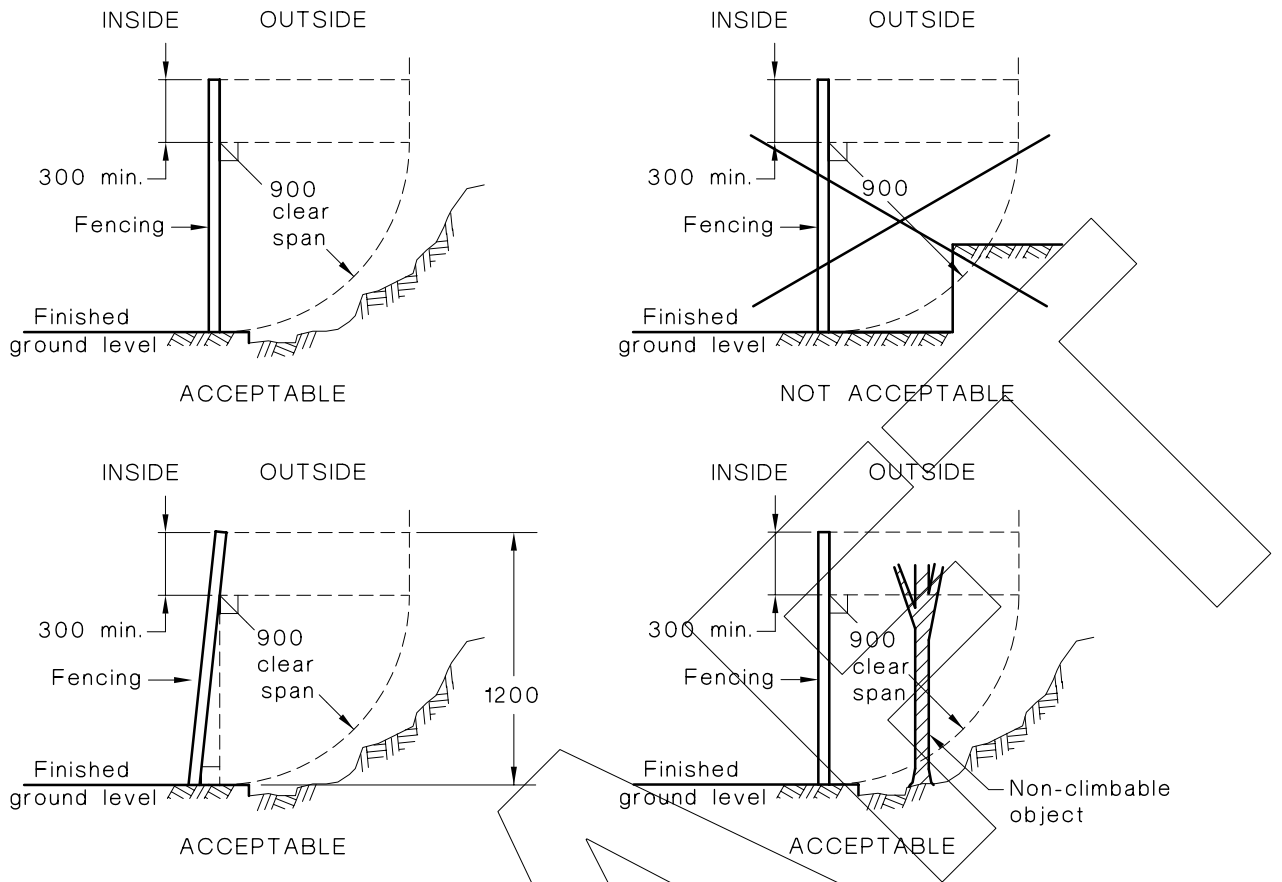


FIGURE 2.1 EFFECTIVE FENCING HEIGHT

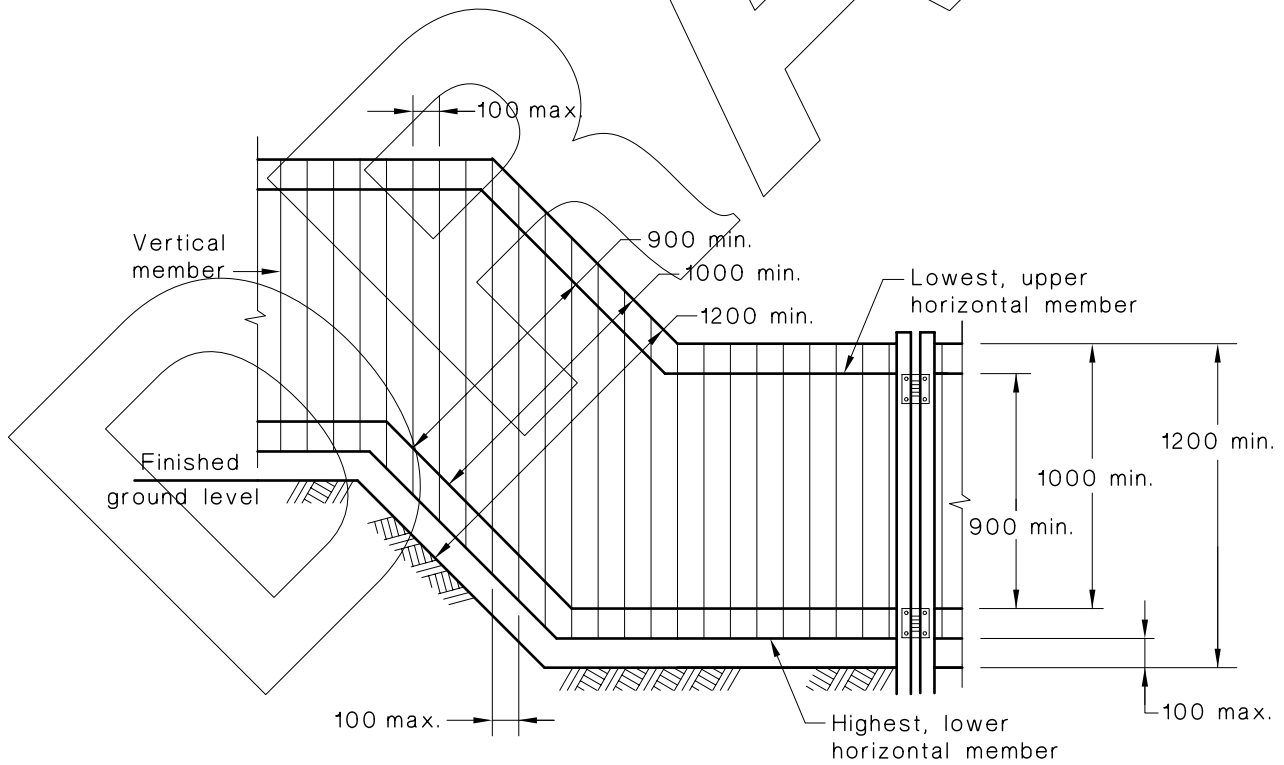


FIGURE 2.2 PERPENDICULAR FENCING DIMENSIONS ON SLOPING GROUND

RAIL ON FIGURE TO BE UODATED

2.3.3 Outside surface

Projections from or indentations into the outside surface of the fencing, or any combination of projections and indentations, shall not form a substantially horizontal surface with a depth greater than 10 mm, unless they are spaced not less than 900 mm apart and provided that the lower projections or indentations are at least 1.0 m below the top of the fencing (see Figure 2.3).

Projections or indentations which form a substantially horizontal surface do not act as a hold for climbing if they comply with Figure 2.4.

The fence shall be designed to be vertical, or where specifically designed to lean away from the pool, it shall not do so by more than 15° to the vertical (see Figure 2.1).

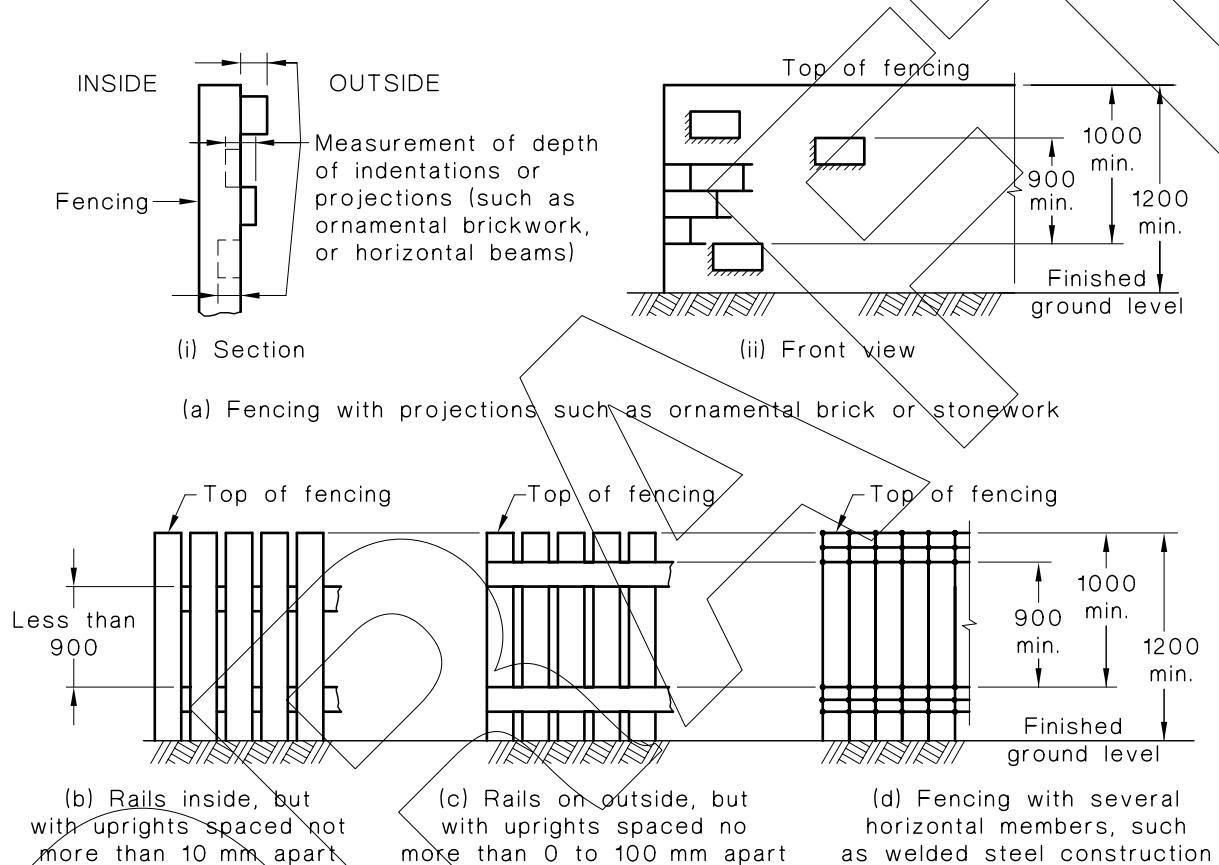


FIGURE 2.3 SPACING OF ACCESSIBLE HORIZONTAL MEMBERS, OR PROJECTIONS OR INDENTATIONS

2.3.4 Horizontal climbable members

Where fencing components provide a substantially horizontal surface, such as rails, rods, wires or bracings, that could be used as holds for climbing are located on the outside of the fencing, or where vertical members are spaced such that they provide clear openings of more than 10 mm width, the following requirements shall apply except for gate hinges:

- (a) Horizontal members shall be not less than 900 mm apart. Where there are two or more horizontal members, this measurement shall be made from the top surface of the highest lower member to the top surface of the lowest upper member. Where the fence is for a sloping site, the distance between the top surface of the highest lower member and the top surface of the lowest upper member shall be not less than 900 mm, measured perpendicular to the finished ground level (see Figures 2.2 and 2.3).

- (b) The top surface of the highest lower horizontal member shall be at least 1.0 m below the top of the fence (see Figures 2.2 and 2.3).

NOTE: Substantially horizontal surfaces such as rails, rods, wires, or bracings that could be used as holds for climbing, and which comply with the Items (a) and (b), should be located on the inside of the fence.

Gate hinges with a horizontal dimension greater than 10 mm shall not be less than 900 mm apart.

2.3.5 Horizontal non-climbable members

As an alternative to Clause 2.3.4 horizontal members such as rails, located on the outside of the fencing shall not act as a hold for climbing if they comply with the following requirements:

- (a) Horizontal members comply with Figure 2.4.
- (b) Vertical members are spaced to provide a clear opening of not more than 10 mm.

2.3.6 Horizontal surfaces inside the fencing

Where any nearby horizontal surfaces that could be used as holds for climbing are permanently located near the inside of the fencing and where the spacing between vertical members is greater than 10 mm, such surfaces shall be separated from the fencing by a distance of not less than 300 mm.

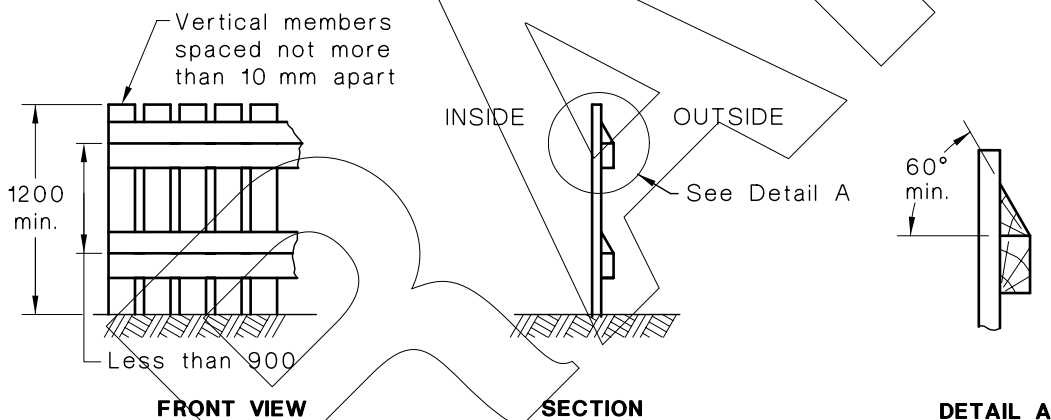


FIGURE 2.4 FENCE WITH HORIZONTAL MEMBERS PROJECTIONS OR INDENTATIONS NOT ACTING AS A HOLD FOR CLIMBING

2.3.7 Vertical members

The clear space between any adjacent vertical members (see Figure 2.2), such as palings, rods or wires, shall not exceed 100 mm at any point.

2.4 GROUND CLEARANCE

The height of any opening between the bottom of the barrier and the finished ground level shall not exceed 100 mm. Except for minimum requirements for perforated materials (See Clause 2.3.2).

2.5 GATES AND FITTINGS

2.5.1 Direction of opening

Gates shall be hung so that they only swing outwards, i.e. away from the pool area.

2.5.2 Operation of gate

The gate shall have sufficient clearance to enable it to swing freely through its arc of operation.

2.5.3 Self-closing device

All gates shall be fitted with a device that will return the gate to the closed position and operate the latching device from any position with a stationary start without the application of a manual force.

The self-closing device shall be capable of complying with these requirements with the gate at any position from resting on the latching mechanism to fully open.

NOTES:

- 1 The self-closing device may require a cushioned back-checking operation to prevent shock when the gate is closing.
- 2 Self-closing devices subject to wind loading (which may prevent their closing) may require special consideration.

2.5.4 Latching device

2.5.4.1 General

Gates shall be fitted with a latching device that will automatically operate on the closing of the gate and will prevent the gate from being re-opened without being manually released.

The latching device shall not be able to be inadvertently adjusted during operation, shall not be able to be locked in the 'open' position and shall not be able to be adjusted without the use of tools.

When in the closed position, the latching mechanism shall not be able to be released by the insertion of any implement between the 10 mm gap shown in Figure 2.5(a) particularly from below the mechanism.

2.5.4.2 Location of the latching device (See Figure 2.5)

Where the release to the latching device or the latch is located at a height less than 1.5 m above the finished ground level or 1.4 m above the highest lower horizontal member and is capable of being released at the latching mechanism, the location of the release of the latching device shall—

- (a) not be on the outside of the fencing;
- (b) be in such a position that to release the latching device from the outside it will be necessary to reach over or through the fencing at a height of not less than 1.2 m above the finished ground level or not less than 1.0 m above the highest lower horizontal member; and
- (c) be at least 150 mm below the top of the gate if a hand-hole is not provided, or at least 150 mm below the edge of any hand-hole opening if a hand-hole is provided.

2.5.4.3 Shielding of latching device (See Figure 2.5)

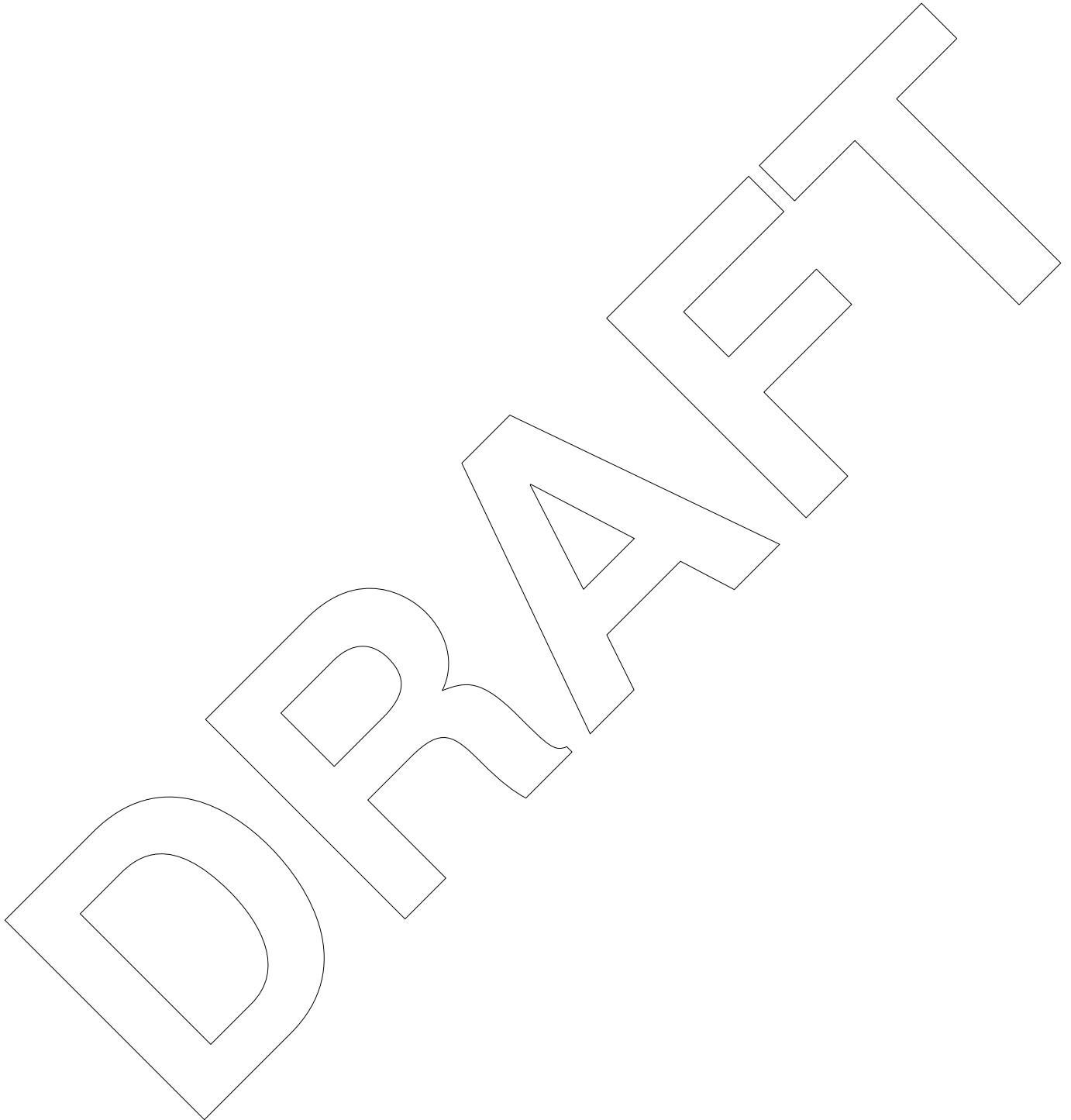
Where the release to either the latching device or the latch is located at a height less than 1.5 m above the finished ground level or 1.4 m above the highest lower horizontal member and is capable of being released at the mechanism, the latch and its release shall be so shielded that no opening greater than 10 mm occurs within an area bounded by—

- (a) an effective radius of 450 mm from the operating parts of the latch; and
- (b) the top of the fence, if this intersects the area described in Item (a).

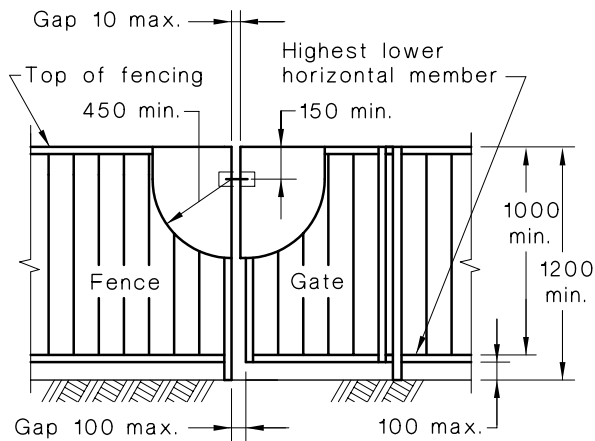
Where it is necessary to have a hand-hole in a gate, the bottom of the opening shall be not less than 1.2 m above the finished ground level or 1.0 m above the highest lower horizontal

member, and the shielding shall be extended up to a horizontal line through the top of the hand-hole, or 150 mm above the top of the latch, whichever is the higher.

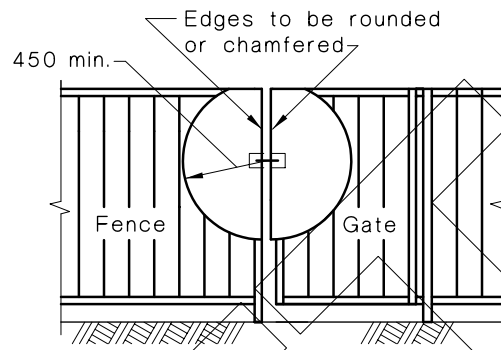
The shield shall be free of sharp edges and the edges of the adjacent parts of the shield on the gate and the fence shall be rounded or chamfered to prevent a hazard when the gate closes.



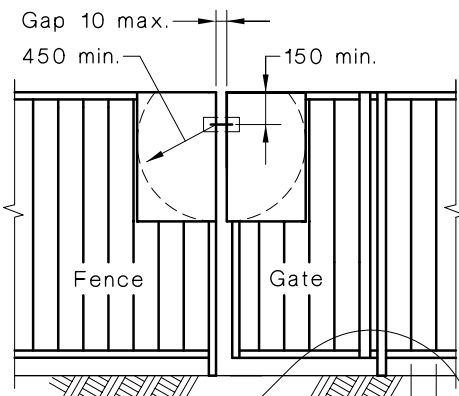
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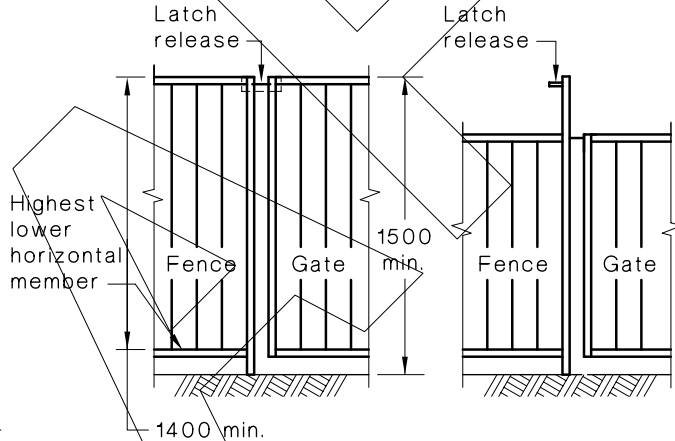
(a) Basic requirements



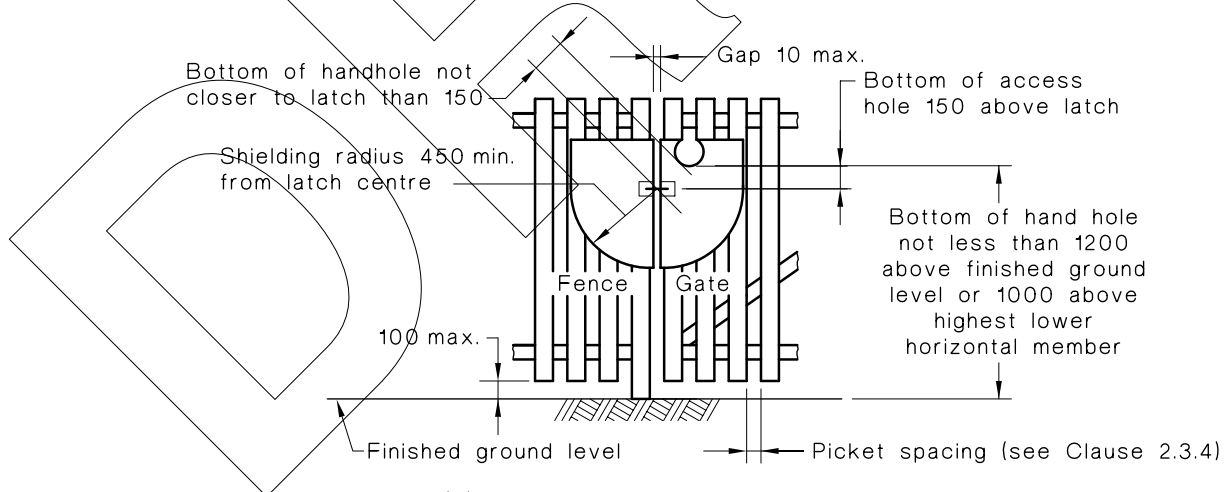
(b) Latch more than 150 below top of fence (shielding is centred on latch)



(c) Shield larger than minimum size



(d) Shield not required for latch or release located at 1500 or higher



(e) Hand hole provided in fence or gate

NOTE: Main dimensional requirements are also shown.

DIMENSIONS IN MILLIMETRES

FIGURE 2.5 LATCH SHIELDING FOR GATES OF OPEN CONSTRUCTION

2.6 RETAINING WALL OR OTHER SUCH BARRIER

2.6.1 Retaining wall on the high side of a pool

A retaining wall or other such barrier on the high side of the pool (see Figure 2.6(a)) shall be an effective barrier if it complies with the following:

- (a) It has an effective height of not less than 2.4 m.
- (b) It does not slope away from the pool by more than 15° to the vertical.

NOTE: It is recommended that a fence that will prevent people from falling off the retaining wall or some other such barrier should be installed on top of the wall or barrier. The fence or barrier does not have to comply with the requirements of this Standard.

2.6.2 Retaining wall on the low side of a pool

A retaining wall or other such barrier on the low side of the pool (see Figure 2.6(b)) shall be an effective barrier if it does not slope towards the pool by more than 15° from the vertical and complies with either of the following:

- (a) It has an effective height complying with Clause 2.3.1 and a surface complying with Clause 2.3.3.
- (b) It has an effective height of not less than 1.8 m.

Where a fence intersects a retaining wall, a fence shall extend to the outer edge of the retaining wall and return 900 mm along the retaining wall in either direction.

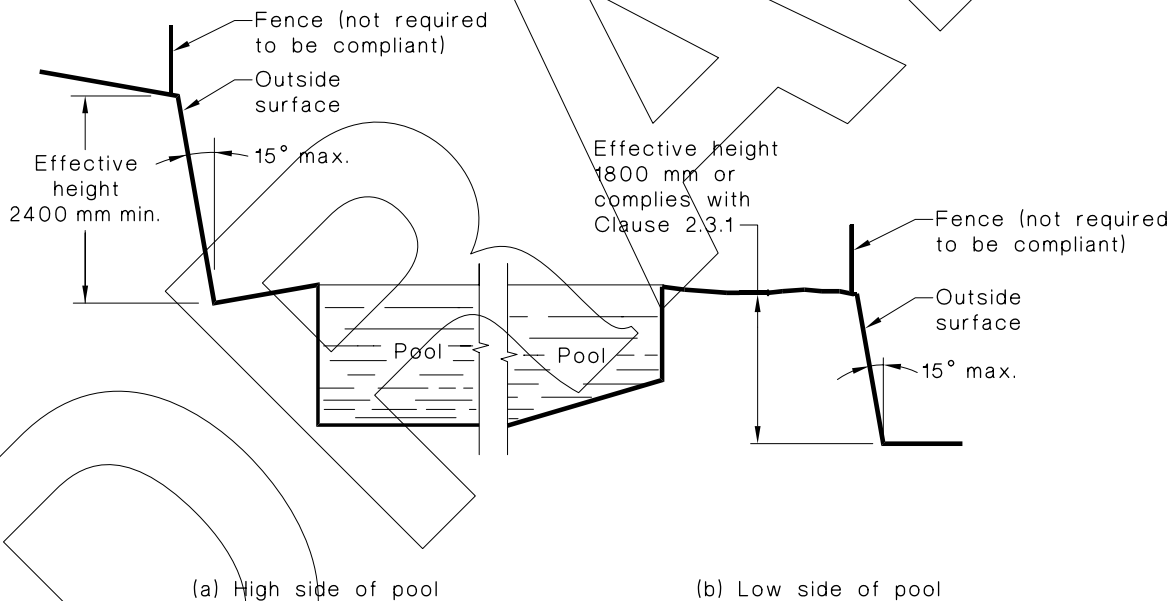


FIGURE 2.6 RETAINING WALL OR OTHER SUCH BARRIER

2.6.3 Permanent Bodies of Water

Permanent bodies of water such as canals, lakes, rivers with a depth of water not less than 300 mm at the edge of the pool area shall be considered as an effective barrier.

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2.7 CHILD-RESISTANT OPENABLE PORTION OF WINDOW

Where the height (h_1) from the sill of the lowest opening panel of the window to the pool surround is less than 2.4 m (see Figure 2.7), the openable portion of the window shall comply with one of the following requirements:

- (a) Where the height (h_2) from the sill of the lowest opening panel of a window to the floor is not greater than 900 mm, then—
 - (i) the openable portion of the window shall be totally covered by bars or a mesh screen which complies with the test for strength and rigidity of fence openings and the strength test for fence components in Clauses 3.1 and 3.3. The bars or mesh screen shall be fixed to the building with fasteners that can only be removed by the use of a tool, e.g. a screwdriver or spanner; or
NOTE: Covering a window with bars or a mesh screen limits egress from the building in an emergency, and rescuers from entering the building.
 - (ii) windows shall be fixed in such a way that they will only open to a maximum of 100 mm and comply with the test for strength and rigidity of fencing openings in Clause 3.1.
- (b) Where the height (h_2) from the sill of the lowest opening panel of a window to the floor is greater than 900 mm but not greater than 1200 mm then the openable portion of the window shall comply with (a) above or shall be fitted with a securely fixed and intact flyscreen.
- (c) A window not complying with Items (a) or (b) shall be located at such a height (h_2) that the distance from the floor to the sill of the lowest opening panel is greater than 1.2 m.

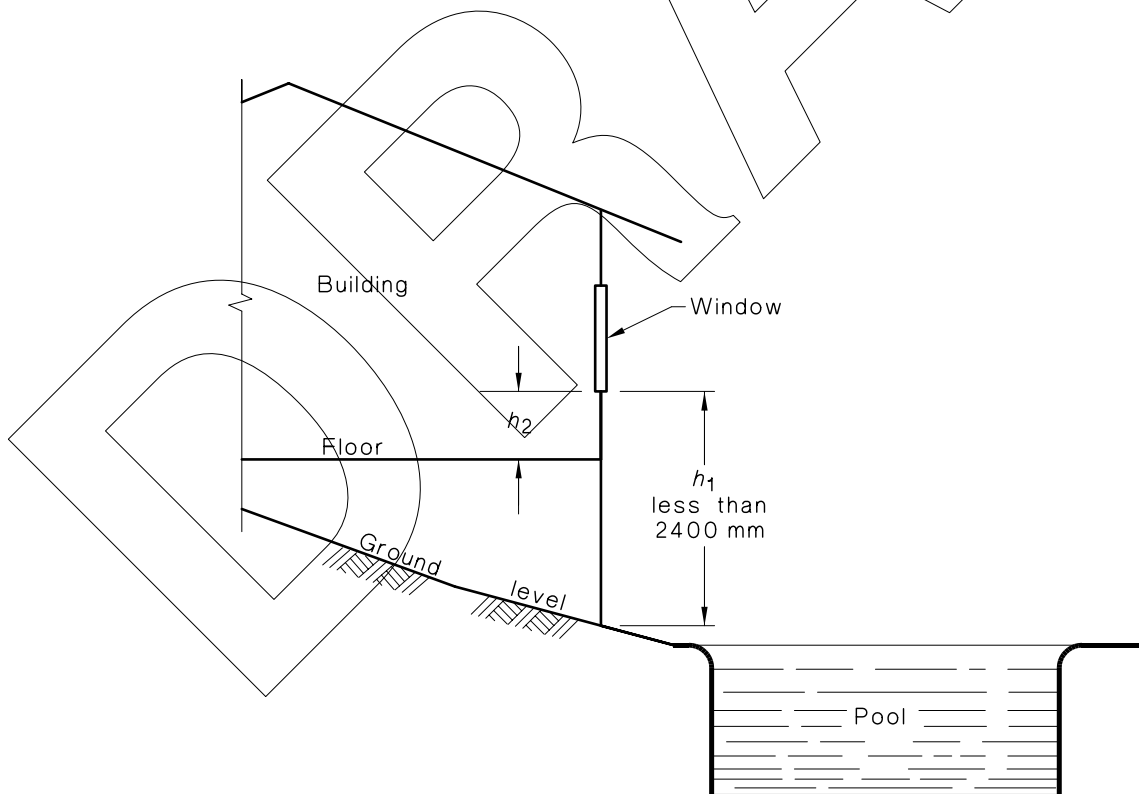


FIGURE 2.7 HEIGHT LIMITATIONS ON CHILD RESISTANT WINDOWS

2.8 CHILD-RESISTANT DOORSET

Child-resistant doorsets shall comply with the following requirements:

- (a) Doors shall be fitted with a self-latching device that will automatically operate on the closing of the door and will prevent the door from being re-opened without manually releasing the device.
- (b) Doors shall be fitted with a self-closing device that will activate immediately after use and will return the door to the closed position and operate the latching device from any position with a stationary start without the application of a manual force.
The self-closing device shall be capable of complying with these requirements with the door at any position from resting on the latching mechanism to fully open
- (c) The release for the latching device on the internal (building) side of the door shall be located not less than 1.5 m above the floor.
- (d) There shall be no footholds wider than 10 mm on the door or its frame between the floor and 1 m above the floor.
- (e) The closing and latching of the door shall comply with Clause 3.4.
- (f) Horizontal members, vertical members, perforated materials or mesh, and finish shall comply with this Standard.
- (g) The doorset shall comply with the performance requirements for a gate for strength and rigidity of openings and strength of gate (see Clauses 3.1 to 3.3).

NOTES:

- 1 In most circumstances allowing direct access to the pool area from a building, even via child-resistant doorsets compromises safety as the doorset may be treated as a normal door and not maintained as a purpose-built safety device to form a barrier that will consistently restrict the access of young children to the swimming pool. Accordingly this option should only be used with caution primarily where physical circumstances preclude any other acceptable solution.
- 2 Garage doors are acceptable only if they comply with the above requirements.
- 3 The placements of pet doors in a child resistant doorset pose a particular danger in that they have been used to gain access to the pool area.

2.9 BALCONY

Where a balcony projects into a pool area (see Figure 2.8) and

- (a) Where the distance (h_3) from the floor of the balcony to the pool surround is less than 2.4 m, and where windows and doors to the balcony do not comply with Clauses 2.7 and 2.8, the balcony shall include a balustrade which complies with the requirements for a fence in this Standard.
- (b) Where there is a pool barrier below and the distance (h_3) from the floor of the balcony to the pool surround is less than 2.4 m, and where windows and doors to the balcony do not comply with Clauses 2.7 and 2.8, the balcony shall include a balustrade which complies with the requirements for a fence in this Standard.

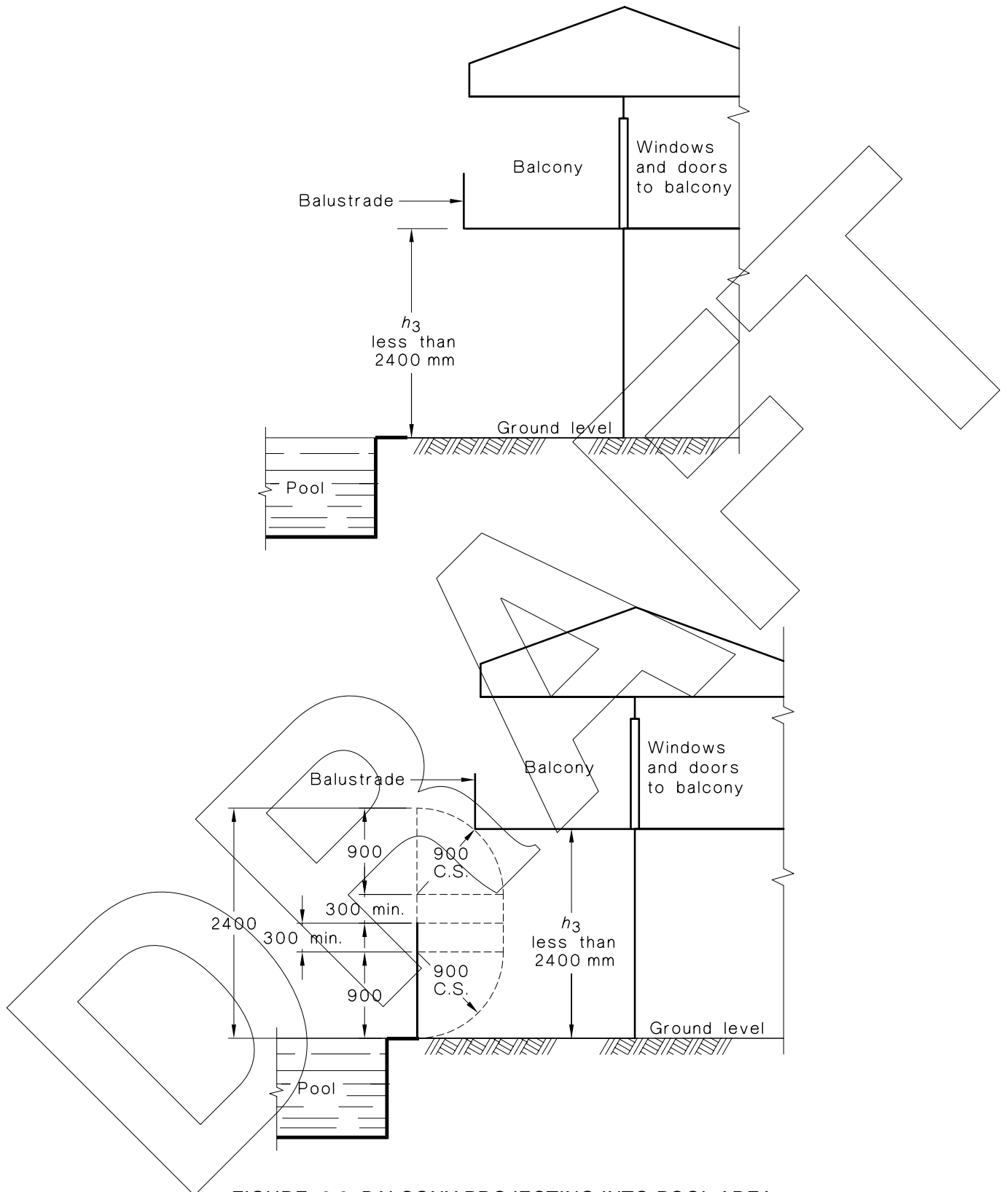


FIGURE 2.8 BALCONY PROJECTING INTO POOL AREA

2.10 ABOVE-GROUND POOLS

For above-ground pools, including inflatable pools the walls of the pool shall be an effective barrier if they comply with Clauses 2.3, 2.3.3, 2.3.4 and 2.3.5.

NOTE: Above ground pools pose a particular hazard because of the tendency to leave climbable objects against the pool that can be used for access into the pool.

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SECTION 3 PERFORMANCE

3.1 STRENGTH AND RIGIDITY OF OPENINGS

When any opening in the fencing is tested in accordance with Appendix A, the test object shall not pass through.

3.2 STRENGTH OF POSTS AND FOOTINGS

When tested in accordance with Appendix B, there shall be no permanent damage to any post, the footings shall not loosen to impair the effectiveness of the barrier and any gate shall meet the requirements of Clauses 2.5.3. and 2.5.4.

3.3 STRENGTH OF FENCING COMPONENTS

3.3.1 Rigid Components

When tested in accordance with Appendix C, structural components, such as panel infills, top and bottom rails, rods, palings, pickets and the like, shall be capable of—

- (a) sustaining a force of 250 N as per Appendix C without any component becoming permanently deformed.
- (b) sustaining a force of 330 N as per requirements in Appendix C —
 - (i) breaking,
 - (ii) showing signs of fracture, or
 - (iii) becoming permanently deformed by more than 10 mm over its length.

3.3.2 Flexible material and components

When tested in accordance with Appendix D, flexible fencing material and components shall not break or tear or the fixings loosen.

3.4 CLOSING AND LATCHING OF GATES

Each gate shall comply with [AS 2820](#) or with items (a) and (b):

- (a) The gate shall close and latch from any position from resting on the latching mechanism to fully open, under both of the following conditions:
 - (i) Under the natural weight of the gate.
 - (ii) After a mass of 25 kg supported by the top rail is placed at a point 100 mm from the outer edge of the locking stile of the gate.

NOTE: This requirement is intended to indicate whether the automatic closing and latching mechanism is likely to remain effective after the gate has been subject to deflection, either under its own weight or as a result of children swinging on it.

- (b) The latching device and posts of the fencing to which the gate is attached shall be capable of retaining the gate in a closed position when tested in accordance with Item (a).

APPENDIX A

TEST FOR STRENGTH AND RIGIDITY OF FENCING OPENINGS

(Normative)

TESTS TO BE CHECKED AND VERIFIED/ UPDATED

A1 SCOPE

This Appendix sets out a method for determining that fencing is sufficiently strong and rigid to prevent an opening from being forced to a size that would allow a young child to gain entry.

A2 PRINCIPLE

A force is applied to the test object in an attempt to force it through an opening in the fencing.

A3 APPARATUS

The following apparatus is required:

- (a) A cylindrical solid-faced test object 105 ± 1 mm in diameter with a body length of 300 ± 2 mm, as shown in Figure A1.

One end shall be conical and may be truncated to a diameter of 20 mm to provide a flat base for the attachment of fittings.

The test object shall be made from a rigid material having a smooth surface.

- (b) A means of measuring the force applied, such as a spring balance.
 (c) A means of attaching the force measuring device to the test object.

A4 PROCEDURE

Place the conical end of the test object into the opening under test and steadily apply a force of 150 N in an attempt to force the body of the object through the opening.

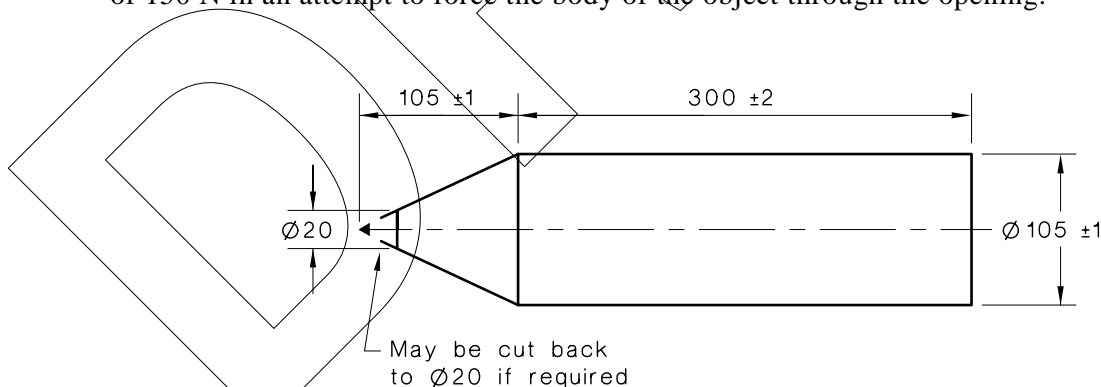


FIGURE A1 TEST OBJECT FOR TESTING OPENINGS AND OTHER COMPONENTS

A5 REPORT

The report shall include the following information:

- (a) Whether the test object passed through any opening in the fencing.
 (b) Reference to this test method, i.e. [AS 1926.1](#), Appendix A.

APPENDIX B STRENGTH TEST FOR POSTS AND FOOTINGS

(Normative)

B1 SCOPE

This Appendix sets out a method for testing whether fencing posts have adequate strength and have been correctly installed.

B2 PRINCIPLE

A force is applied to the fencing post and it is then inspected for signs of fracture, loosening of footings or any damage to the gate that would prevent it from closing and latching from any position.

B3 APPARATUS

The following apparatus is required:

- (a) A cylindrical test object of diameter 105 ± 1 mm, having at least one solid flat-faced end
- (b) A means of measuring the force being applied.

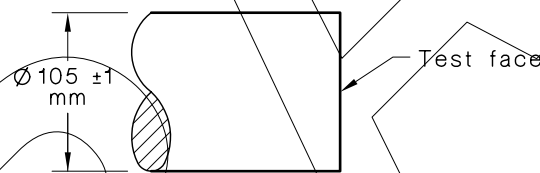


FIGURE B1 TEST OBJECT

B4 PROCEDURE

The procedure shall be as follows:

- (a) Place the flat end of the test object against the post under test at a height of 1.2 m above finished ground level.
- (b) Apply a horizontal force of 330 N, without shock, to the test object so as to load the post in the desired direction.
- (c) Inspect the post for damage or loosening of the footings.
- (d) For gate posts, check that the gate will close and latch when released from various positions including fully open and with the gate resting on the latching mechanism.

B5 REPORT

The report shall include the following information:

- (a) Breakage or sign of fracture of any post.
- (b) Loosening of any component.
- (c) Any damage to the gate that would prevent it from closing and latching from any position.

- (d) Whether the post or gate passed or failed the test.
- (e) Reference to this test method, i.e. [AS 1926.1](#), Appendix B.

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APPENDIX C STRENGTH TEST FOR RIGID FENCINGS COMPONENTS

(Normative)

C1 SCOPE

This Appendix sets out a method for testing whether fencing components have adequate strength.

C2 PRINCIPLE

A force is applied to the component or components of the fencing and it is then inspected for signs of fracture, permanent deformation or loosening of components.

C3 APPARATUS

The following apparatus is required:

- (a) A cylindrical test object of diameter 105 ± 1 mm, having at least one solid flat-faced end (see Figure C1).
- (b) A means of measuring the force being applied.

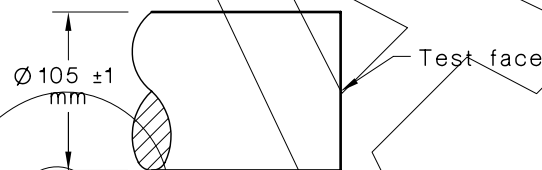


FIGURE C1 TEST OBJECT

C4 PROCEDURE

The procedure shall be as follows:

- (a) Place the flat end of the test object against the component (or several components of such size or spacing (or both) that they will be covered by the 105 mm diameter) under test. The test shall be carried out from either side of the fencing component and at the component's weakest points.
- (b) Apply a force of 250 N, without shock, to the test object to load the component in the desired direction.
- (c) Remove the test force and inspect the component for permanent deformation.
- (d) Apply a force of 330 N, without shock, to the test object in order to load the component in the desired direction.
- (e) Remove the test force and inspect the component for the following:
 - (i) Breakage or sign of fracture of any component.
 - (ii) Loosening of any component.
- (f) Measure and record the amount of deformation of the component, in millimetres.

C5 REPORT

The report shall include the following information:

- (a) Whether the component permanently deformed under a load of 250 N.
- (b) For a load of 330 N whether there was—
 - (i) breakage or sign of fracture of any component; and
 - (ii) loosening of any component.
- (c) For a load of 330 N, the amount of deformation of any component, in millimetres.
- (d) Whether the component passed or failed the test.
- (e) Reference to this test method, i.e. [AS 1926.1](#), Appendix C.

APPENDIX D

STRENGTH TEST FOR FLEXIBLE MATERIALS AND COMPONENTS

(Normative)

D1 SCOPE

This Appendix sets out a method for testing whether flexible materials and components have adequate strength and whether such materials are adequately fixed to prevent them being penetrated or deformed under dynamic loading.

D2 PRINCIPLE

A dynamic force is applied to the component or components of the fencing and it is then inspected for signs of penetration, breakage, tearing or signs of fracture, or loosening of components.

D3 APPARATUS

The following apparatus is required:

- (a) Test object A—a 8.1 kg half spherical solid-faced test object 150 ± 1 mm diameter.
- (b) Test object B—a 9.1 kg half spherical solid-faced test object 50 ± 1 mm diameter.
- (c) A means of swinging the test object through an arc of radii 1400 mm and 1800 mm.

D4 PROCEDURE

The procedure shall be as follows:

- (a) Suspend test object A a distance of the selected radius below a pivot point to allow a pendulum action and place the test object against the component. The test shall be carried out from either side of the fencing component and at the component's weakest points.
- (b) Raise test object A through the selected angle to the vertical (see Figure D1) and release.
- (c) Inspect the component for the following—
 - (i) breakage, tearing or signs of fracture;
 - (ii) loosening of any component or fixings.
- (d) Repeat step (a) using test object B.
- (e) Raise test object B through the selected angle to the vertical (see Figure D1) and release.
- (f) Repeat step (c).

D5 REPORT

The report shall include the following:

- (a) For test object A and B separately, whether there was—
 - (i) breakage, tearing or signs of fracture of any component;
 - (ii) loosening of any components or fixings.
- (b) Whether the component passed or failed the test.

(c) Reference to this test method i.e. [AS 1926.1](#) Appendix D.

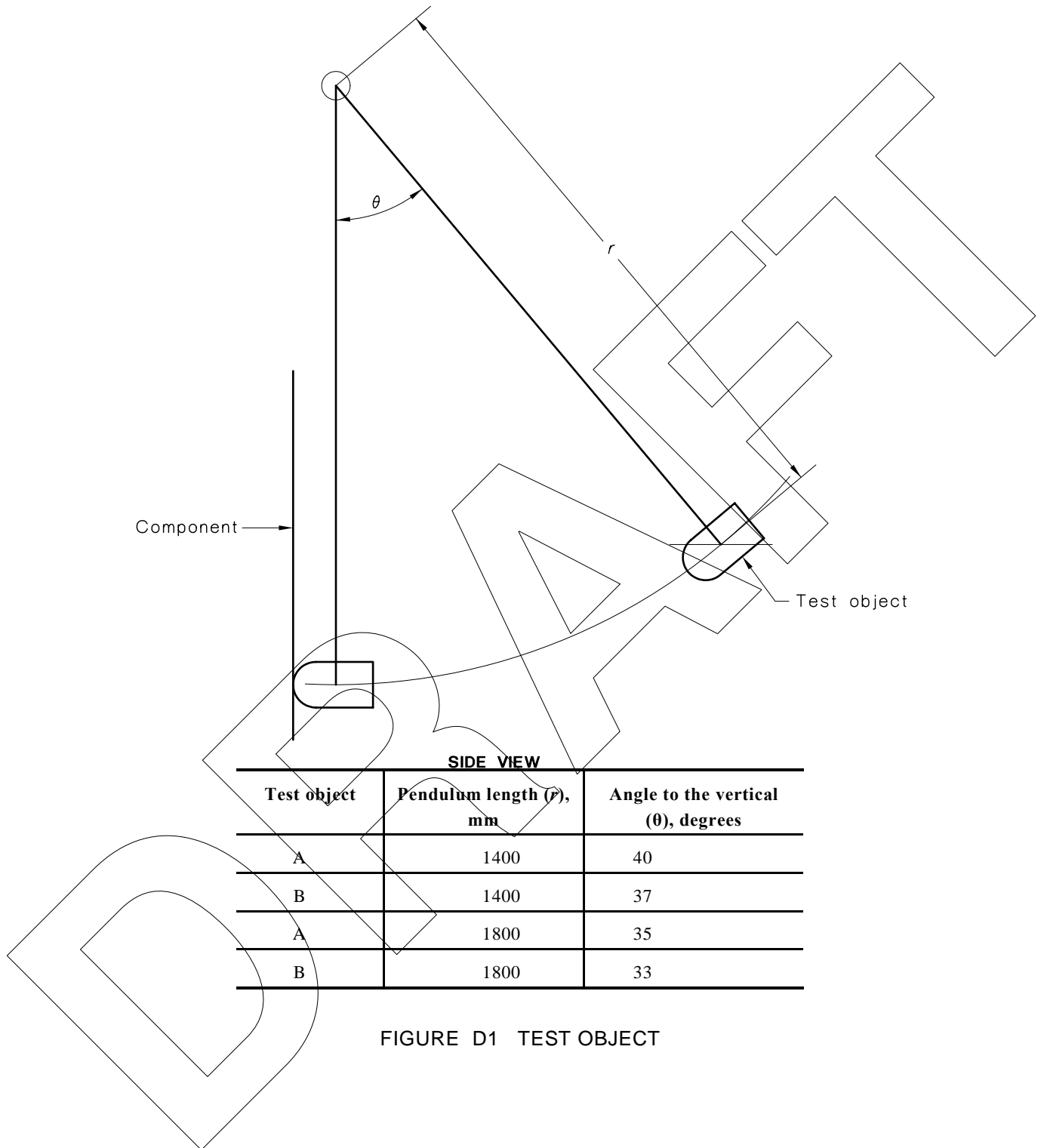


FIGURE D1 TEST OBJECT

APPENDIX E EXAMPLES OF POOL FENCES

(Informative)

E1 GENERAL

The information given in this Appendix is intended to serve as a broad guide to some of the main constructional criteria that some of the more common types of fencing will have to meet in order to satisfy this Standard.

The examples are given as a simplified guide to commonly available fencing; they are not a recommendation for any style of fencing and do not preclude the necessity for the fencing to meet other requirements of this Standard.

E2 TYPICAL FENCES

The following examples serve to identify the significant dimensional requirements that need to be met to enable a fence to comply with this Standard.

(a) *Post-and-rail construction*

For fences constructed of palings, galvanized steel, fibre cement (fibro), aluminium or similar profiled or flat wall material, the significant dimensions are as follows:

- (i) The rails, if located on the outside of the fencing, are to be not less than 900 mm apart when measured between the top surfaces of the rails.
- (ii) The top surface of the lower rail is to be at least 1.1 m from the top of the fencing.

The effect of these similar requirements in Items (c), (d) and (e) is that there should be a height of at least 900 mm clear of any potential handholds or footholds, and that any foothold at the bottom of this clear distance should be at least 1.1 m from the top of the fencing.

Picket fences also meet these requirements if pickets are spaced more than 10 mm apart or the rails are on the outside. In any event, pickets should not be spaced more than 100 mm apart.

(b) *Perforated materials, wire mesh or fabric fences*

For fences of this type, the significant dimensions are as follows:

- (i) Where the material has openings greater than 13 mm, the fence height is to be increased in accordance with Clause 2.3.2.
- (ii) Materials with openings greater than 100 mm are not to be used.

To meet the requirements of this Standard it will generally be necessary for the material to be firmly fastened and tightly strung and meet Clause 2.3.2.

(c) *Fabricated metal fences*

For fences fabricated from small section steel, aluminium or other suitable metals, the significant dimensions are as follows:

- (i) Vertical members are to be spaced not more than 100 mm apart.
- (ii) Horizontal members are to be placed a minimum of 900 mm apart vertically. Where there are two or more horizontal members, the 900 mm measurement is made from the top surface of the highest lower member. The top surface of the

highest of the lower group of horizontal members is to be at least 1.1 m below the top of the fencing.

(d) *Infill panel fences*

For fences constructed of glass-fibre reinforced plastics, reinforced glass, timber, plywood, exterior grades of hardboard or other sheet products in framed ledge or panel construction, the significant dimensions are as follows:

- (i) Any potential climbing holds are to be at least 900 mm apart vertically.
- (ii) The lower of any climbing holds between which the vertical distance of 900 mm is measured is to be at least 1.1 m below the top of the fencing.
- (iii) The width of any openings below a height of 1.2 m is not to exceed 100 mm.

In addition, it will be necessary to ensure that the sheet material is sufficiently rigid and adequately fixed to its frame.

(e) *Brickwork or masonry fences*

For fences constructed of bricks, blocks or masonry, the significant dimensions are as follows:

- (i) Any projections, indentations or combination of these having a depth greater than 10 mm are to be spaced at least 900 mm apart vertically.
- (ii) The lower of any such projections or indentations is to be at least 1.1 m below the top of the fencing.

Natural features such as rock faces that form part of the fence would be acceptable provided that they meet the requirements of the Standard.

(f) *Brushwood fences*

For fences constructed of woven brushwood, the significant requirements are as follows:

- (i) Brushwood must be tightly packed so that it will meet the performance requirements in Clause 3.1.
- (ii) Wires on the outside of the fence are to be interwoven with the brushwood in order not to provide a foothold for young children.

It may also be necessary to provide some sort of capping on the top of the fence to prevent birds from picking at the brushwood twigs.

NOTE: Brushwood fences are known to deteriorate quickly in comparison to other types of fencing and therefore should be regularly maintained.

- (g) *Retaining walls* Where a vertical or near-vertical retaining wall not less than 1.2 m high supports the pool and the surface of the wall complies with Clause 2.3.4, a fence complying with this Standard is not required on top of the wall. A fence which will prevent people from falling off the retaining wall should, however, be installed on top of the wall.

*** END OF DRAFT ***

PREPARATION OF AUSTRALIAN STANDARDS

Australian Standards are prepared by a consensus process involving representatives nominated by organizations drawn from all major interests associated with the subject. Australian Standards may be derived from existing industry Standards, from established international Standards and practices or may be developed within a Standards Australia technical committee.

During the development process, Australian Standards are made available in draft form at all sales offices and through affiliated overseas bodies in order that all interests concerned with the application of a proposed Standard are given the opportunity to submit views on the requirements to be included.

The following interests are represented on the committee responsible for this draft Australian Standard:

Australian Industry Group
Office of Fair Trading NSW Consumer Protection Agency
Australian Institute of Building Surveyors
Kidsafe National
Standards Australia
Commonwealth Department of Health and Ageing
Australian Building Codes Board
National Injury Surveillance Unit
Royal Life Saving Society Australia
Department of Local Government and Planning (Queensland)
Swimming Pool and Spa Association of NSW Limited
Planning South Australia
Swimming Pool and Spa Association of Victoria
Swimming Pool and Spa Association of Western Australia

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Standards Australia is an independent company, limited by guarantee, which prepares and publishes most of the voluntary technical and commercial standards used in Australia. These standards are developed through an open process of consultation and consensus, in which all interested parties are invited to participate. Through a Memorandum of Understanding with the Commonwealth government, Standards Australia is recognized as Australia's peak national standards body.

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The first national Standards organization was created in New Zealand in 1932. The Standards Council of New Zealand is the national authority responsible for the production of Standards. Standards New Zealand is the trading arm of the Standards Council established under the Standards Act 1988.

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