

Pool fences review and compare

Too many pool fences are still failing key safety requirements.

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01 .Pool fences - are they safe?

In 2007-08, 16 children aged four years or younger drowned in swimming pools in Australia. Such tragedies could have been avoided with adequate pool fencing, says a recent Queensland study. The study showed the great majority of toddler drowning deaths in domestic pools between 1992 and 2001 occurred in pools that did not comply with fencing requirements - including pools with no fencing, inadequate fences or gates that were tied or propped open.

In all Australian states, fences are required for domestic swimming pools, but while regulations have been in place in most states since at least the early 1990s, they aren't enforced as rigorously as they could be. Local councils administer pool fencing regulations in most areas, and usually inspect the fence when it's first constructed. But fences can fall into disrepair over time, and so far only WA requires ongoing inspections every four years to ensure the fence still meets



requirements. Queensland is currently considering a similar regime.

Although no fence can replace the need to supervise young children at all times in and around the pool, adequate pool fencing is an integral part of pool safety. Correct installation and use are essential, but it's also vital that the fence be correctly designed and sturdily built so that youngsters can't climb it or squeeze through the bars.

CHOICE test

To find out the safety of pool fences currently on the market, CHOICE tested 16, purchased in Sydney and Wollongong, against key sections of the Australian standard AS 1926.1-2007. We didn't test gates, as their key safety aspects (such as their ability to self-close) depend very much on correct installation.

There are three stages at which the safety of a pool fence or its components should be assessed:

- At time of manufacture.
- At installation.
- At regular intervals after installation.

Brands tested

We tested fence panels from the following suppliers:

- Amazing Fences
- ARC Fences
Boresi
- Bunnings
- Dunn & Farrugia
- Fencing and Gate
- Kelui Tooling
- Our Town Fencing

Time for a mandatory standard

Most jurisdictions require pool owners (particularly of newly constructed pools) to install fences that meet the Australian standard. However, there's no mandatory safety standard applied to pool fences at the time of retail - in other words, the onus is on the consumer to install a standard-compliant fence, but not on the manufacturer or retailer to supply one.

CHOICE believes that just as pool fencing itself is mandatory, the Australian standard for pool fencing should also be mandatory, so consumers can be confident any fence they buy will comply with safety regulations and can be recalled if found to be faulty. Responsible fence manufacturers already routinely test their fences to the standard, so this would not be a burden to most companies.

We also believe pool fence installers should be licensed to ensure they know the relevant regulations. And last, but far from

least, regular inspection, as is done in WA, should be implemented in all states to ensure pool fences aren't just safe when installed, but remain safe for the rest of their existence.

02.Results

Passes and failures

All the fences on test passed dimensional aspects required by the standard. This means they are high enough, the gaps between their vertical bars aren't too wide and they have no climbing footholds. They also passed the "strength of components" test, so their bars and welds are strong enough to withstand reasonably strong forces, such as from a heavy bump. In our last report in 2004 one fence failed this test; that company appears to be no longer trading.

However, five of the 16 tested fences failed the "strength and rigidity of openings" test, which checks whether the vertical bars are rigid enough to stop an opening being forced to a size that would allow a young child to gain entry. This is a better result than in 2004, when 18 of the 31 fences failed this test, but is still not good enough. Any fence that fails this test could pose a safety hazard.

Small variations may be to blame

Some manufacturers whose products failed our test queried our results, saying their fences are tested and certified as meeting the Australian standard. There are subtle but potentially significant differences between the 2007 version of the standard, which we tested to, and the older 1993 version which many manufacturers still use and which is often referenced in pool fence regulations; this could account for why we found different results for some fences.

Small manufacturing variations could also account for why their products failed our test. For example, the distance between the vertical bars might be a few millimetres larger than intended, or a section of metal tubing might be slightly thinner (and therefore weaker) than usual. A few millimetres can make the difference between passing and failing. Even with products for which a mandatory standard has been in effect for years (such as cots), we sometimes find samples that fail to meet the standard, despite that model being certified; manufacturing variations, either in materials or processes, usually account for this.

Following manufacturer responses, we obtained and tested more samples of the ARC Fences Eden flat top and Bunnings flat and loop top fences against the "strength and rigidity of openings" test. The ARC fence passed this second round, as did some of the Bunnings panels, but one each of the Bunnings flat top and loop top fences again failed the test. See the table below for the full results.

Bunnings mends its fences

Following our test, Bunnings conducted further testing and found a wide range of variance in the strength and rigidity of the

uprights in some samples. They have therefore withdrawn some stock from stores. From late April 2009, their supplier, Protector Aluminium, will manufacture the fences to a higher specification, ensuring the fence consistently meets the standard by a comfortable margin.

Bunnings is confident that existing installations of its pool fences don't present a high risk. However, if you have a flat top pool fence from Bunnings and are concerned about its safety, you can contact Protector Aluminium on 1300 724 588 for a free on-site test.

Results table

Full results of our testing are show in the table below

Brand / model (in alphabetical order within each group)	Material	'Strength and rigidity of openings' test	Price (\$)
Flat top			
Amazing Fences 02 9831 8211	Aluminium	Fail	95
ARC Fences Eden www.arcfences.com.au	Aluminium	Fail	115
Boresi www.boresi.com.au	Aluminium	Pass	99
Bunnings www.bunnings.com.au	Aluminium	Fail	99
Dunn & Farrugia www.dunnandfarrugia.com.au	Steel	Pass	99
Fencing and Gate www.fencingandgate.com.au	Steel	Pass	100
Kelui Tooling 02 9632 7000	Steel	Fail	92
Our Town Fencing www.ourtownfencing.com.au	Aluminium	Pass	99
Loop top			
Bunnings www.bunnings.com.au	Aluminium	Fail	99
Dunn & Farrugia www.dunnandfarrugia.com.au	Steel	Pass	99
Fencing and Gate www.fencingandgate.com.au	Steel	Pass	100
Kelui Tooling 02 9632 7000	Steel	Pass	92
Our Town Fencing www.ourtownfencing.com.au	Aluminium	Pass	99
Other			
ARC Fences Wattle www.arcfences.com.au	Steel wire	Pass	160
ARC Fences Willow	Steel wire	Pass	171

www.arcfences.com.au

Bunnings Double Top

Aluminium

Pass

160

www.bunnings.com.au

Table notes

- Material All the fences were made of tubular aluminium or steel, except the ARC Wattle and Willow which are made from 8mm steel wire.
- 'Strength and rigidity of openings' test "Fail" means that at least one panel of that fence failed this test. "Pass" means all the tested panels passed.
- Price The price we paid for each panel in January 2009.
- Each panel is 2.4m long, except the Amazing Fences which is 1.9m.

How we test

We test the fence panels against the Australian standard for pool fencing, AS 1926.1:2007.

- Dimensions Our tester measures the fence's overall height, the height of the non-climbable zone (between the lower and upper horizontal rails) and the gaps between vertical bars. All the fences passed this test.
- Finish He checks for any sharp edges, projections or finger traps. Some fences had minor failures.
- Strength and rigidity of openings The fence panel is mounted vertically and a cone-shaped probe is forced through the bars at three different locations. It must take at least 150 Newtons of force (approximately 15kg) to get through. See the table above for which fences passed this test.
- Strength of fencing components The fence is mounted horizontally and subjected to different forces of up to 330N (approximately 33kg). Components such as rails and bars must not permanently deform, break or come loose. All the fences passed this test.

03.Types of pool fence

Flat top or loop top fence

As with our 2004 test, the majority of fences that failed strength and rigidity - five out of six - were of the flat-top design (see the [results table](#)). The vertical bars of these fences are fixed and welded inside flat horizontal upper and lower rails. In loop-top fences, sections of tubular pipe are bent through the upper rail so that each section of pipe forms two vertical bars rather than one.



Each style of fence is about the same overall height of 1.2m, but in a loop-top design the upper horizontal rail generally sits a little lower than in a flat top fence. This means the section of vertical bar between the two horizontal rails is shorter in a loop top fence, which could help make that section more rigid.

Flat-top fences aren't necessarily inherently weak; four of those tested passed for strength and rigidity. However, our results

show once again that a loop-top fence is a safer bet.

Other designs

Bunnings, Willow and Wattle

We tested three other pool fences that are neither flat nor loop top (see the table). The Bunnings Double Top fence has two upper horizontal rails with decorative metalwork incorporated. This results in a similar effect to the loop-top design, with a shorter section of vertical bar than in an equivalent height flat-top fence. This was the only one of the three Bunnings panels to pass our test.



The other two fences are the wire-based ARC Willow and Wattle, both of which also passed. These use 8mm diameter vertical wires or rods instead of tubular rods. Equivalent ARC fences also passed our 2004 test. These fences are more expensive per panel than the flat and loop top fences on test, but are well worth considering. Wire-based fencing can be bought in galvanised or powder-coated finishes.

Steel, aluminium or glass?

Some manufacturers and suppliers told us that tubular aluminium fencing is increasingly popular over steel. Aluminium is less susceptible to rusting, which can be a concern if you live near the ocean or have a saltwater pool, and steel prices have recently risen, although we found fence prices were very similar for each material. However, steel pool fences are usually powder-coated (as are aluminium fences) or galvanised, so there should be no significant risk of rusting provided they're kept in good condition.

Our latest results indicate tubular steel fencing is stronger and more likely to pass the standard tests than its aluminium equivalent. However, as with the flat-top versus loop-top debate, there's no guarantee; one steel fence failed our test, and three aluminium fences passed. Quality of construction and design count much more than the material used.

Safety glass is another popular material for pool fences. It's made from solid sheets so there are no gaps for a child to squeeze through (provided the panels are correctly installed). Glass fencing is also less obtrusive than most steel or aluminium fences. However, safety glass panels are almost three times more expensive. We didn't test any glass fencing, as few of the standard tests we use normally apply to it.

04. What to look for

Pool fence essentials

- Standard certification The fence should be certified as meeting Australian Standard AS 1926.1; look for labels such as the red

and white “5Ticks” mark, or ask the supplier for a statement of compliance. Our testing suggests this isn’t always a guarantee that individual fence panels will pass the standard tests, but is still worth looking for.

- Design and material No one design or material is necessarily safer than another. However, our results indicate loop-top or similar style fences might be worth considering over flat-top designs- see [Types of pool fence](#).
- Installation Check that the installer is familiar with local pool fence regulations. If you’re installing it yourself, contact your local council and state government to get a copy of all applicable laws. Guides for pool fence installation are available. When the fence is complete, get the local council or authority to inspect it and give you a certificate of compliance.

Buyer beware

When we bought the pool fences, one manufacturer inadvertently supplied us with garden fencing instead, despite us clearly asking for pool fencing. Their garden fencing looks identical to their pool fencing but is made from a slightly thinner and weaker grade of aluminium.

Unsurprisingly, some of the garden fence panels failed our test and it was only when discussing this with the manufacturer that their mistake was discovered. We then obtained the correct fence and it passed our test. When ordering your fence, specify clearly that you want pool fencing, and check that your invoice or receipt states clearly that the product is pool fencing.

Pool safety

- Supervise toddlers and youngsters at all times when they’re in or around a pool. Supervision should always be by a competent adult, not an older child. Stay alert; lack of supervision is a key factor in many toddler drownings.
- Keep your pool fence and gate in good repair and make sure the gate latches automatically when shut. A significant number of drownings occur in pools that have no fence, or an inadequate or poorly maintained one.
- Don’t prop or tie the gate open, even for a short time.
- Don’t leave any objects near the fence that a child could use as a climbing aid.
- Three-sided pool fencing (with direct access from the house to the pool area) is permitted for many older pools, but four-sided fencing is safer, as it completely separates the pool area from the house. At the least, make sure any doors or windows opening onto the pool area are secure and lockable, and preferably self-closing.
- At least one household member should know how to perform cardiopulmonary resuscitation (CPR) in case of accidents. Display a guide to CPR near the pool (this is mandatory in many areas).
- Familiarise your children with water and teach them to swim as early as possible, but bear in mind this isn’t a substitute for supervision and good fencing; youngsters who can swim may still get into difficulties and drown.