

Proper Construction of Pool Barrier Fencing and Balcony and Guard Railings

A properly installed pool barrier fence, balcony or guard railing should not have any openings, external footholds or handholds, indentations or protrusions, or horizontal members which would make it easy to climb.

The fence should be installed in a way that prevents other objects, building walls or permanent structures from being used to climb. It should not be possible for a young child to slip through any holes or spaces in the fence, or between the bottom of the fence and the ground.

Fences and gates should be constructed so that there is less than 2 inches of space between the bottom of the barrier and the ground. There should be no holes or spaces in the fence where children could slip through.

Vertical members in the barrier should not be more than 4 inches apart, and should not permit a block or sphere 4 inches in diameter to pass through. On ornamental iron fences, the distance between the tops of horizontal members should be greater than 45 inches apart to make them difficult to climb.

Important Study Provides the Basis for This Requirement

In his evaluation of data collected by the U. S. Consumer Product Safety Commission in studies of the physical measurements of over 8,000 randomly selected children living in the U. S., Elliott Stephenson reported in an article entitled "Unsafe Guardrails: The Silent & Inviting Trap" published in the July/August 1993 issue of Fabricator:

1. Approximately one half of all 13 to 18 month old children can successfully pass through a 5 inch wide opening, but that none of the children over one year old could pass through a 4 inch wide opening.
2. Measurement of head size and chest depth of the children in the study showed that approximately 95% of all 10 year olds have head widths of less than 6 inches.
3. The chest depth of 95% of the 7 year olds tested was less than 6 inches.

Study results indicate a need to space vertical members in barrier fences no more than 4 inches apart. Fences with openings of 5 or 6 inches or more will not prevent young children from squeezing their bodies through the openings in the fence.

Why Retroactively?

The question may well be asked why any pool owners who have complied with regulations in the past are now being required to review their situation and commit themselves to spend money and effort in providing measures over and above those which were required in the past.

The answer to this question is revealed by the recorded deaths and brain damage suffered by young children who drown or nearly drown in swimming pools and spas to which they are to gain access. Unfortunately this happens even when adults are there at the time of the incident. Some facts in relation to drowning incidents involving young children:

- Young children drown after escaping from immediate supervision.
- Although it is desirable for children to be supervised all the time it is impractical to watch children all the time.
- Drowning occurs in silence. Children in this age group do not make any noise when they fall into a pool. Contrary to popular belief they do not splash or try to attract attention and drown very quickly.
- Young children, particularly toddlers, are adventurous, are attracted to sparkling water and have little ability to look after themselves and they frequently fall because they are unsteady and top-heavy.
- On average there are 7,000 drowning deaths each year in the United States.

In view of these facts, the extent of community concern and the tragedies surrounding such drownings many insurance companies, government agencies and municipalities with support from many agencies including Kidsafe, MAV, SPASA, MBAV require these changes retroactively.

Portions of this material were provided by - Alison Osinski, PhD, Aquatic Consulting Services, San Diego, California – Phone: (619) 224-3100 – Email: alisonh2o@aol.com and the City of Victoria, Australia Dept of Building and Safety.