

SOUTH AFRICAN NATIONAL STANDARD

The safety of swimming pools

As published by SABS Standards Division
6 December 2018



POWERPLASTICS
— poolcovers —



WWW.POWERPLASTICS.CO.ZA

SANS 10277:2005
Edition 3

ISBN 978-0-626-31608-2

SANS 10134:2016
Edition 3

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WARNING
This document references other
documents normatively.

Published by SABS Standards Division
 1 Dr Lategan Road Groenkloof ☒ Private Bag X191 Pretoria 0001
 Tel: +27 12 428 7911 Fax: +27 12 344 1568
www.sabs.co.za
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SANS 10134:2016

Edition 3

Table of changes

Change No.	Date	Scope

Foreword

This South African standard was approved by National Committee SABS TC 059/SC 05, *Construction standards – Swimming pool standards*, in accordance with procedures of the SABS Standards Division, in compliance with annex 3 of the WTO/TBT agreement.

This document was approved for publication in xxxxxxxxx 2016.

This document supersedes SANS 10134:2008 (edition 1.2).

This document is referenced in the National Building Regulations and Building Standards Act, 1977 (Act No. 103 of 1977).

Annex A forms an integral part of this document.

Preface

In 1972 the United Municipal Executive of South Africa decided, in the interests of national safety, to request the South African Bureau of Standards to prepare a code of practice for the safety of swimming pools on private premises.

The past decade has seen a considerable increase in the number of swimming pools provided for private families and, consequently, it is increasingly difficult to prevent children from using these pools in the absence of adult supervision. Inevitably the number of accidental drowning among children and other persons is increasing and the need for high standards of protection in respect of private swimming pools is therefore clearly indicated.

However, all protective measures are in themselves insufficient and may indeed be a potential danger rather than a safety measure if those responsible for protection are poorly informed. Protection, in the broadest sense, embraces responsibility for the use and maintenance of equipment and also for the exercising of certain essential precautions. A section relating to these responsibilities is therefore included in the code of practice and it is recommended that local authorities or manufacturers inform prospective pool owners of the provisions of this section by attaching a copy of this code to plans when these are returned to the owners.

This standard allows for a protective device in the form of a pool safety net or pool safety cover to be used as an alternative to an enclosure provided that such use does not conflict with regulations D4

SANS 10277:2005

Edition 3

and D5 of the National Building Regulations and Building Standards Act, 1977 (Act No. 103 of 1977), read with regulation DD4.1 of SANS 10400-D:2011.

Contents

	Page
Foreword	
Preface	
1 Scope	3
2 Normative references	3
3 Definitions	3
4 Responsibilities for the provision of protection	5
5 Principles and methods of protection	6
6 Planning the protection	7
7 Recommendations for the design and construction of enclosures and protective devices...	8
8 Requirements for walls, fences, safety nets and safety covers	9
9 Installation of protective devices	10
10 Conclusion	11

SANS 10134:2016

Edition 3

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The safety of private swimming pools

1 Scope

1.1 This standard lays down responsibilities, principles, methods, and planning techniques for the protection of children from the hazards of swimming pools situated on private premises, and makes recommendations for the design and installation of typical protective enclosures or protective device that are intended to prevent a child from gaining unauthorized access to a swimming pool.

1.2 Safety measures such as life-jackets for keeping people afloat are not covered by this standard.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies. Information on currently valid national and international standards can be obtained from the SABS Standards Division.

ASTM F1346-91:2010 Standard Performance Specification for Safety Covers and Labelling Requirements for all covers for Swimming Pools, Spas and Hot Tubs.

SANS 1390, *Steel fencing for private swimming pools*.

3 Definitions

3.1 For the purposes of this document, the following definitions apply.

3.1.1

acceptable

acceptable to the authority administering this standard, or to the parties concluding the purchase contract, as relevant

3.1.2

adult

person who is fully grown and developed

3.1.3

child

children

person(s) not older than five years of age

SANS 10134:2016

Edition 3

3.1.4

enclosure

protective structure, in the form of a wall or a fence (or both) including any door and gate therein that acts as a surrounding barrier preventing access to a swimming pool

3.1.5

fittings

subordinate parts or components to the protective device such as anchors, hooks, straps, belts, ratchets, pulleys, keys, clips

3.1.6

ground level

level of the ground or other surface immediately adjacent to a fencing post or the base of a wall

3.1.7

manufacturer

company or person that manufactures, builds, or installs protective devices or enclosures to prevent children from gaining unauthorized access to a swimming pool area

3.1.8

occupier

person who occupies the premises on which a swimming pool is situated

3.1.9

owner

registered owner of the premises on which a swimming pool is situated or is to be built

NOTE This includes a body corporate or home owners association where communal swimming pools are used.

3.1.10

protective device

equipment, product or fittings designed to prevent a child from gaining unauthorized access to a swimming pool

3.1.11

safety net

protective device manually or mechanically positioned over the water surface and secured in place by fittings that prevent a child under age five from gaining access to the water

NOTE When correctly used and maintained in line with the manufacturer's instructions, a safety net acts as a physical barrier and restrains movement (which should be completely removed prior to use of the swimming pool), inhibiting access to the swimming pool water thereby reducing the risk of a child drowning.

3.1.12

safety cover

safety cover is a protective device manually or mechanically positioned over the water surface and secured in place by fittings or attachments that will prevent a child under age five from gaining access to the water and supports the child off the water

NOTE When correctly used and maintained in line with the manufacturer's instructions, a safety cover acts as a physical barrier (which should be completely removed prior to use of the swimming pool) preventing access to the water surface and allowing for the removal of a hazardous level of accumulated surface water thereby reducing the risk of child drowning.

3.1.13

swimming pool

movable or an immovable structural vessel that is sunk into the ground or that is wholly or partially above the level of the adjoining ground and that is, at any point, capable of containing water to a depth greater than 300 mm

3.1.14

swimming pool area

area surrounding a swimming pool that allows direct access to the swimming pool water

4 Responsibilities for the provision of protection

4.1 Owner

4.1.1 An owner shall ensure that the swimming pool is protected to prevent unauthorized access at all times.

4.1.2 This can be achieved by

- a) installing an enclosure and OR a safety net or safety cover (or both) as described in this code of practice,
- b) ensuring that any protective device or enclosure is installed and used according to the manufacturer's specifications, and
- c) maintaining the product to ensure that it is always in good working order.

4.2 Occupier

An occupier, whether or not he is the owner, shall

- a) not allow water in an unprotected swimming pool;
- b) ensure competent adult supervision at the swimming pool;
- c) stipulate that non-resident persons may not use the swimming pool during his absence, unless under their own competent adult supervision;
- d) provide, easy access to the pool brush pole or leaf scoop pole at the swimming pool, which will allow a person at the pool's edge, to assist a distressed person in the water;
- e) prevent the use of objects that can be used to cut, climb or scale a swimming pool enclosure or protective device;
- f) ensure that the latching, locking mechanism of the gate, door in the enclosure is operative and that the gate or door is locked when the enclosure is vacated;
- g) ensure that any protective device used for example safety net or safety cover is operative and secured in accordance with the manufacturer's specifications when the pool area is vacated;
- h) ensure that any protective device is entirely removed from the swimming pool before any person utilizes the swimming pool;
- i) examine all protective devices or (or both) enclosures at regular intervals to check that posts and connections are secure, that components or materials have not deteriorated, and that no other faulty condition has developed; and
- j) maintain the water level at the recommended level below the safety cover or safety net.

4.3 Manufacturer

4.3.1 A manufacturer shall

- a) ensure that production takes place in a controlled manufacturing environment with procedures in place to allow for the traceability of the product;

- b) ensure that all materials and components used in the manufacture and installation of protective devices and enclosures shall be non harmful to human health and intended for use in these applications and suitably resistant to the prevailing weather conditions;
- c) ensure that any protective device or enclosure used operates in accordance with the relevant recommendations given in this standard;
- d) provide an instruction manual which describes the use and maintenance of the particular protective device or enclosure(s);
- e) ensure that any protective device is installed in accordance with the manufacturer's specifications; and
- f) ensure that any protective device is clearly labeled and every label shall include:
 - 1) the manufacturers name;
 - 2) the date installed; and
 - 3) instructions to regularly inspect the safety device for wear or damage (or both).

4.3.2 For further requirements relating to labeling refer to ASTM F1346-91.

5 Principles and methods of protection

5.1 Principles

Any protective device or enclosure should

- a) be regarded as part of the swimming pool's permanent requirements; and
- b) effectively prevent a child from gaining unauthorized access to the swimming pool

5.2 Methods of protection

5.2.1 Below-ground swimming pools

A below-ground swimming pool (i.e. a pool where the level of the coping corresponds approximately to the level of the adjoining surface, and includes where the coping is stepped to accommodate water features or built structures) should be provided with either an enclosure or safety cover or safety net to restrict access to the swimming pool by unauthorized children or persons.

5.2.2 Above-ground swimming pools

5.2.2.1 An above-ground swimming pool (i.e. a pool where the base corresponds approximately to the level of the adjoining ground, and that may or may not have steps leading to the top of the pool) should be provided with an enclosure or a protective device in the form of either a safety net or safety cover to restrict access to the swimming pool by unauthorized children or persons.

5.2.2.2 If the swimming pool is of a material retained in position by steel mesh bracing, or is so designed that the pool walls are self-supporting, and less than 1,2 m in height, then the pool should be completely enclosed by an enclosure or covered with a safety net or safety cover.

5.2.2.3 If the swimming pool has brick or concrete walls of height at least 1,2 m and external steps, then it is necessary to enclose only the steps.

5.2.2.4 In both cases where an enclosure is utilized the enclosure gate should be positioned adjacent to the steps.

6 Planning the protection

6.1 Existing swimming pools

When providing an enclosure or protective device for an existing swimming pool (other than of a portable type), the positions of fencing posts or of the walls (as relevant), protective device fittings or components should be so determined that the enclosure or protective device

- a) will surround the swimming pool completely or cover the entire water surface and adhere to the test methods and specifications as described in ASTM F1346-91;
- b) will ensure that the swimming pool area will be kept well clear of any natural or artificial features onto which a child can climb to access the swimming pool area;
- c) will effectively isolate the swimming pool from all areas of the home and restrict unauthorized access to the swimming pool area to any person under the age of five;
- d) will be inaccessible from any door that can provide access to the swimming pool area from a building unless such a door provides the same degree of protection as is recommended in 7.3;
- e) will be well clear of any window that opens on to the swimming pool area unless such window is effectively screened to prevent a child from going through it; and
- f) should be so installed that it will cover the water surface area of the pool entirely when providing a safety net or safety cover.

6.2 Proposed swimming pools

The location of a proposed swimming pool should be so planned that the following recommendations (which are given in descending order of importance) are considered:

- a) The location should be such that all the recommendations given in 6.1 can be provided; and
- b) The design of the proposed pool allows for either an enclosure or protective device to restrict access to the swimming pool.

7 Recommendations for the design and construction of enclosures and protective devices

7.1 Design and construction

7.1.1 A pool owner or occupier shall make use of at least one of the following alternatives:

- a) a safety cover; and
- b) a safety net or pool enclosure.

7.1.2 A protective device in the form of a safety net or safety cover shall comply with ASTM F1346-91 and a pool enclosure shall comply with SANS 1390.

7.1.3 An enclosure or protective device (or both) should be so designed and constructed that it

- a) prevents children from penetrating openings within its structure or design;
- b) prevents children from climbing up its sides;
- c) prevents children from crawling beneath its base;
- d) prevents children from scaling its crest;
- e) embodies a means of access to the swimming pool area that is very difficult for a child (but easy for an adult) to open;
- f) is robust and durable; and
- g) has no sharp edges or projections that can injure a child.

7.1.4 Safety nets and safety covers which comply with ASTM F1346-91 shall in summary adhere to the requirements given in (a) to (c) (inclusive).

a) Static load and load bearing weight:

- i) In the case of a pool with a width or diameter of greater than 2,4 m from the periphery, the device shall be able to hold a weight of 220 kgs (2 adults and 1 child) to permit a rescue operation.
- ii) In the case of a pool with a width or diameter not greater than 2,4 m the device shall withstand the weight of 125 kg (weight of one adult and 1 child).

b) Perimeter deflection, gaps, openings: The protective device shall be designed in such a way that should a child under five fall on the safety cover or safety net, neither that child nor another child

SANS 10134:2016

Edition 3

could slip through any opening between the safety cover or safety net and the side of the pool or gain access to the pool.

c) Surface drainage and water removal: The safety cover or safety net shall be constructed such that it shall drain substantially all standing water from the cover within a period of 5 min after cessation of normal rainfall or sprinkler water.

d) Opening in the safety cover:

Any opening in the safety cover or safety net shall be sufficiently small and strong to prevent the opening from being forced to a size that will allow an object the size of the test object (as described in ASTM F1346-91) to pass through. (114 mm diameter)

8 Requirements for walls, fences, safety nets and safety covers

8.1 Walls

It should be ensured that a wall that forms part of an enclosure

- a) is of concrete or brick or of any other acceptable material;
- b) extends to a height, above-ground level, of at least 1,20 m; and
- c) has (up to a height of at least 1,20 m above ground level) smooth vertical outer surfaces that are free from recesses and projections that might provide a foothold for a child.

8.2 Fences

A fence that forms an enclosure or part of an enclosure should be assembled from individual fencing panels and a gate panel, all of which are retained in position by posts that are secured below ground level. All fencing panels, gate panels, fencing posts and gate posts should comply with the requirements of SANS 1390.

8.3 Safety nets and safety covers

8.3.1 General

Any protective device utilized shall adhere to the specifications, performance tests and requirements for swimming pool safety nets and covers as contained in ASTM F1346-91.

8.3.2 Safety nets

A safety net should be of such dimensions that it completely covers the surface of the water, and is a protective device that is machine manufactured, from extruded monofilament braid, in square mesh netting design no greater than 80 mm × 80 mm. Manually or mechanically positioned over the water surface and secured in place by fittings that will prevent a child under age five from removing the protective device. When correctly used and maintained in line with the manufacturer's instructions, a safety net acts as a physical barrier (which shall be completely removed prior to use of the swimming pool) inhibiting movement and preventing access to the water surface without allowing for the accumulation of hazardous levels of surface water.

Safety nets are to be installed by the manufacturer or accredited responsible parties (or both).

8.3.3 Safety covers

8.3.3.1 A pool cover is not a safety cover if

- a) it allows pooling of water on top of the cover;
- b) if there is no central tensioning system or locking system to stop a child from entering the pool; or
- c) if the securing points are workable by a child of five years old or under.

8.3.3.2 A safety cover shall be of sufficient weight tolerance to allow a child to be removed from on top of the cover by an adult without putting the lives of both in danger. There should also be no openings in the cover i.e. A complete barrier should be achieved by the cover. When correctly used and maintained in line with the manufacturer's instructions, a safety cover acts as a 100 % impenetrable physical barrier to the water (which shall be completely removed prior to use of the swimming pool). In addition it offers environmental benefits in saving on water evaporation, preventing debris from entering the pool hence the need to run the pool filter for excessive amounts of time hence thus saving electricity and chemicals.

8.3.3.3 Safety covers are to be installed by the manufacturer or accredited responsible parties (or both). Detailed instructions for installation shall also be given.

9 Installation of protective devices

9.1 Enclosures

9.1.1 Walls

A wall should be built in accordance with standard building practices.

9.1.2 Fences

A fence should be so installed that

- a) the base of each post is at least 500 mm below ground level and is embedded for a distance of at least 200 mm in a concrete cube, of sides 300 mm or, if local conditions (e.g. the presence of solid rock) make this impracticable, that each post is so secured that, when a force is applied horizontally to a point within 25 mm of the top of the post, the deflection of the top of the post does not exceed that of the top of a post embedded in concrete and subjected (in the same way) to the same force;
- b) fencing panels are adequately and permanently secured to the posts in such positions that the bases of their vertical bars are just in contact with the ground surface; and
- c) a concrete footing, of width at least 150 mm and extending below ground level to a depth of at least 150 mm, can be installed below the gate in its closed position.

9.2 Pool covers and safety nets

9.2.1 Installation and use of safety covers and safety nets

Safety covers and safety nets are to be installed by the manufacturer or accredited responsible parties (or both). Detailed instructions for use shall also be given.

9.2.2 Fastening Mechanisms or devices

Ties, attachments points, anchors, anchorage, and controls for automatic and other covers or nets or other mechanical means of fastening a safety cover or safety net shall include provisions such as keys, combination locks, special tools, devices or inaccessible locations and the like to inhibit children under the age of 5 from removing or opening the safety cover or safety net.

9.2.3 Manufacture

Any protective device installed shall be free from any signs of damage or inherent defects which will impair the intended performance of the device.

10 Conclusion

Drowning is one of the leading causes of injury or death in children (or both). It is the responsibility of every pool builder, pool owner and pool user to ensure that safety precautions are considered and implemented to minimise the chances of accidental drowning.
