

AS 5348:2022



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Australia



Pool covers



AS 5348:2022

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- Australian Building Codes Board
- Australian Bureau of Meteorology
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- Australian Institute of Refrigeration Air Conditioning and Heating
- Clean Energy Council
- Consumer Electronics Suppliers Association
- CSIRO
- Gas Appliance Manufacturers Association of Australia
- James Cook University
- Smart Energy Council
- Swimming Pool and Spa Association of Australia
- University of New South Wales
- University of South Australia

Additional Interests

- Daisy Pool covers
- Sunbather Solar Pool Heating & Covers
- Supreme Heating

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Preface

This Standard was prepared by the Australian members of the Joint Standards Australia/Standards New Zealand Committee CS-028, Solar Heating and Cooling.

The objective of this document is to provide a series of benchmarks and tests for pool covers to meet performance requirements that will lead to the reduction of costs associated with evaporation and the heating of pools and spas.

[Appendix A](#) provides users with additional helpful information regarding measuring, installation and use of pool covers.

The term “informative” is used in Standards to define the application of the appendices to which it applies. An “informative” appendix is only for information and guidance.

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Introduction

Heat losses from swimming pools occur mainly from the water surface and various types of cover are available to reduce these losses in both indoor and outdoor pools. Pool covers are a useful energy conservation measure with any type of pool, and many will enable the pool to function more efficiently as natural collectors of solar radiation thus enabling pool water to be heated.

Pool covers are effective on both outdoor and indoor pools. Covering a pool when it is not in use is the single most effective means of reducing water loss and heating costs.

This document was developed due to the concerns of the Swimming Pool and Spa industry that pool covers have historically lacked manufacturing rigour and made unverifiable claims of performance. Swimming Pool and Spa Industry working groups identified a significant need for a benchmark to be established whereby consumers could rely on claims being made in the marketplace.

NOTES

Australian Standard®

Pool covers

Section 1 Scope and general

1.1 Scope

This document sets out a series of tests and performance benchmarks for pool covers that represent the majority of those available today.

The Standard does not apply to any pool cover used as an alternative to swimming pool safety barriers, liquid type covers and building structures over pools.

NOTE 1 Materials used in pool covers should not be harmful when they come into direct human contact.

NOTE 2 Pool covers are not designed to support the weight of a young child, are not a safety device, and cannot be substituted for a conforming pool barrier. For pool barrier requirements refer to AS 1926.1:2012.

1.2 Normative references

The following documents are referred to in text in such a way that some or all of their content constitutes requirements in this document.

NOTE Documents referenced for informative purposes are listed in the Bibliography.

AS 2001.2.3.1:2001, *Methods of tests for textiles, Method 2.3.1: Physical tests — Determination of maximum force and elongation at maximum force using the strip method*

AS 2001.2.3.2:2001, *Methods of tests for textiles, Method 2.3.2: Physical tests — Determination of maximum force using the grab method (ISO 13934-2:1999, MOD)*

AS 2001.2.10:1986, *Methods of tests for textiles, Part 2.10: Physical tests — Determination of the tear resistance of woven textile fabrics by the wing-rip method*

AS 2001.2.17—1987 (R 2016), *Methods of tests for textiles, Part 2.17: Physical tests — Determination of resistance of fabrics to water penetration — Hydrostatic pressure test*

AS 2001.4.21:2006, *Methods of tests for textiles, Method 4.21: Colourfastness tests - Determination of colourfastness to light using an artificial light source (mercury vapour, tungsten filament, internally phosphor-coated lamp)*

AS 4174:2018, *Knitted and woven shade fabrics*

AS/NZS 4201.1—1994, *Pliable building membranes and underlays — Methods of test, Method 1: Resistance to dry delamination*

ISO 2896:2001, *Rigid cellular plastics — Determination of water absorption*

ISO 8302:1991, *Thermal insulation — Determination of steady-state thermal resistance and related properties — Guarded hot plate apparatus*

ASTM C518-17, *Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus*

ASTM D1938-19, *Standard Test Method for Tear-Propagation Resistance (Trouser Tear) of Plastic Film and Thin Sheeting by a Single-Tear Method*

ASTM D412-16, *Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers — Tension*

ASTM D1709-16ae1, *Standard Test Methods for Impact Resistance of Plastic Film by the Free-Falling Dart Method*

ASTM D4632-15a, *Standard Test Method for Grab Breaking Load and Elongation of Geotextiles*

ASTM E96-16, *Standard Test Methods for Water Vapor Transmission of Materials*

Section 2 Terms and definitions

For the purpose of this Standard, the following terms and definitions apply.

2.1

bubble/solar pool cover

Low Density Polyethylene (LDPE) transparent, translucent, or opaque dual laminated cover that floats on the surface of a swimming pool

2.2

buoyancy

buoyant

able to float

2.3

debris

leaves and other windblown rubbish

2.4

delamination

splitting apart of pool cover material into layers

2.5

evaporation

process of water becoming a vapour

2.6

foam pool cover

fabric composite crosslinked, closed cell polyolefin foam (or similar material) laminated between layers of UV stabilised film, fully opaque to sunlight and designed to float on water

2.7

gauge

the thickness of a pool cover

2.8

lamination

bonding of two or more layers of materials

2.9

light exposure performance

accelerated ultraviolet test

2.10

MBT

mercury blended tungsten filament light globe

2.11

mesh pool cover

porous, woven textile normally suspended above the pool water and anchored at the edges of a swimming pool, including bar style covers supported by metal rods at regular intervals

2.12

micron

unit of measurement equal to 1 thousandth of a millimetre

2.13

minimum gauge test

test of the thickness of a pool cover

2.14**pool cover**

cover placed on or immediately above the water surface of a swimming pool

2.15**slat cover**

rigid pool cover comprised of transparent, translucent, or opaque interlocking and buoyant PVC or Polycarbonate slats (or other suitable materials)

2.16**spa hard cover**

rigid cover, designed primarily to rest on the spa shell above water level

2.17**surface area**

total area of the water surface of a swimming pool

2.18**swimming pool**

any excavation or structure containing water and principally used, or that is designed, manufactured or adapted to be principally used for swimming, wading, paddling, or the like, including a bathing or wading pool, or spa

2.19**tear strength**

force measurement on pool cover to determine the point at which it will tear

2.20**tensile strength**

resistance of a pool cover to breaking under tension

2.21**thermal performance**

rate at which a pool cover is capable of retaining or preventing the transfer of heat to and from pool water

2.22**translucent**

material through which light can pass

2.23**water absorption**

amount of water absorbed by a composite material when immersed in water for a stipulated period of time

2.24**water loss**

loss of water from the swimming pool due to evaporation

2.25**water vapour transmission**

passage of water vapor through a material

Section 3 Pool cover testing

Pool covers shall be tested in accordance with the relevant tests as set out in [Clauses 5 to 9](#).

Pool covers that do not meet the minimum requirements of any test shall be deemed to have failed.

Tests should be carried out by a laboratory that is independent of the pool cover manufacturer or supplier.

NOTE 1 Installers of pool covers should see [Appendix A](#) to ensure pool covers are sized and installed correctly.

NOTE 2 Installers of swimming pool and spa heating systems should see [Appendix B](#) for the effect of pool covers on heat load calculations.