



Guidelines for Applicants

This is one of a series of guidelines to help applicants to the Smart Approved WaterMark, Australia's outdoor water conservation label. Applications to the Smart WaterMark are assessed by an Independent Technical Expert Panel against the following four criteria:

1. **Water Saving** - The primary purpose of the product is directly related to reducing actual water use where there is a direct correlation between the use of the product and water savings.
2. **Fitness for Purpose** - Supporting documentation (such as instructions and marketing material) helps ensure that users get the best water savings/efficiency from the product.
3. **Meeting Regulations and Standards** - The product is of high quality and meets industry standards, and customer and community expectations.
4. **Environmentally Sustainable** - The product, while satisfying the above three criteria, is environmentally sustainable, and that in making water savings the product will not adversely impact on the environment in other areas.

Guideline 1. Pool Covers

The Expert Panel needs verifiable independent evidence that the product achieves the water savings claimed in the application (i.e. through independent testing, case studies or comparative reports). Please note, unsubstantiated marketing claims are not regarded as evidence of water saving.

The Smart WaterMark stakeholder web site has further information on the application process including forms, timetables and fee rates at: www.smartwatermark.info

If you have any questions about these guidelines or your application please contact the Smart WaterMark national office. Email: info@smartwatermark.info Landline: +61 (0) 2 9223 3322

Pool Covers

There is little doubt that a pool cover used in the correct way will reduce evaporation from a swimming pool and hence save water. There is a lot of evidence, however, that suggests that amount of water saved varies greatly from cover to cover, depending on factors including the thickness and type of the material, and way in which the cover is attached to the pool. The Expert Panel has considered these issues and established the following guidelines for pool cover applications.

Water saving

As the main aim of the scheme is to reduce water use, applications must include a demonstration of the water saving potential of the product. Applicants must be able to demonstrate that the specific product that is the subject of the application has saved water. Acceptable evidence includes:

1. A test by any independent agency such as a consulting engineer, university, CSIRO, testing facility or any other testing agency which has no commercial interest in the product. There is a standard test, American Standards Test Methods; E96-2000, which has been specifically written to test the transmission of water vapour through a material. It is a relatively simple test that can be carried out by any competent testing laboratory. The standard states:"

"These test methods cover the determination of water vapor transmission (WVT) of materials through which the passage of water vapor may be of importance, such as paper, plastic films, other sheet materials, fiberboards, gypsum and plaster products, wood products, and plastics. The test methods are limited to specimens not over 11/4 in. (32 mm) in thickness except as provided in Section.... Two basic methods, the Desiccant Method and the Water Method, are provided for the measurement of permeance, and two variations include service conditions with one side wetted and service conditions with low humidity on one side and high humidity on the other. Agreement should not be expected between results obtained by different methods. The method should be selected that more nearly approaches the conditions of use."

The Panel believes that the Water Method is the most appropriate method to use when determining the water saving capabilities of pool covers and blankets.

2. Once the test has been done a product must be able to demonstrate minimum water savings of **80%** compared with the open water vessel which is used as a comparison in the test. This minimum will ensure that there is a better than even chance that normal use of the cover will result in some water savings.
3. A detailed case study which demonstrates that the installation of a cover resulted in water savings will also suffice. If a detailed case study is available then testing according to ASTM E96 is not necessary. The case study should detail water use (or loss) prior to the installation of the cover and water loss following installation of the cover. The results should be verified by an independent party.
4. The evidence must be directly applicable to the product which is the subject of the application. As an example the panel will not accept a case study which relates to another product sold, manufactured or distributed by the same company.

General information downloaded from websites, such as water authority websites, which state that pool covers can save water is acceptable. The evidence must relate specifically to the product that is the subject of the application.

If a product is made from material which is supplied by a third party and the material has been awarded a Mark, there must be clear documented evidence that the material is the same and that its water saving characteristics have not been altered in any way. In this case the product will still be the subject of a separate application fee and subject to separate licence fee because it is deemed to be a different product.

Fitness for purpose

Pool covers should be fit for purpose and backed by an appropriate warranty and must be in the final form in which it is available to the public. It may be cut, shaped or modified for a particular installation but the material itself should be the same as in the application.

The *Pool Cover Minimum Specifications* overleaf have been developed by the Pool and Spa Cover Association of Australia to show manufacturers how to demonstrate 'fitness for purpose'.

Please supply a copy of relevant Material Safety Data Sheet(s) with your pool cover application.

PASCAA POOL COVER MINIMUM SPECIFICATIONS

Gauge

Test Method: PASCAA TM 1001 (described overleaf)

Recommendation: 400 micron blanket total layer thickness at selvedge and between bubbles and 90 micron minimum thickness measured anywhere on the product

Tensile Strength

Test Method: ASTM D 412

Recommendation: Minimum 15MPa

Tear Strength

Test Method: ASTM 1938

Recommendation: Minimum 35N

Puncture Resistance

Test Method: ASTM D1709 Falling dart impact test

Recommendation: Minimum 700 grams

Light Exposure Performance Criteria

Test Method: Four weeks exposure to AS 2001.4.21 (MBTF light barrel test).

Samples then tested before and after exposure for breaking force and elongation to AS 2001.2.3.2 in machine direction and cross direction

Recommendation: No more than 10% breaking force loss and no more than 65% loss of elongation in machine direction and cross direction after MBTF exposure

Type of Stabilizers Used

Recommendation: A letter from the stabilizer manufacturer stating their product contains no materials harmful to health (e.g. no heavy metals, PCB's etc)

Buoyancy

Test Method: PASCAA TM1002 (described overleaf)

Recommendation: 1.5lit/m² Minimum buoyancy (displaced volume/m²)

Warranty

Recommendation: The blanket must be protected by a written warranty covering a minimum four-year period. The warranty shall be at least 12 months repair or replace and pro-rated year by year for the remaining three years

Thermal Performance (R value)

Test Method: ISO 8302 Guarded Hot Plate

Recommendation: Minimum R Value 0.05m²K/W

Lamination

Test Method: AS 4201.1 Dry Delamination

Recommendation: Pass

Tests to be carried out by an independent NATA approved testing facility.

PASCAA TEST METHOD TM 1001: MINIMUM GAUGE TEST

Equipment

Digital Micrometer with 3 micron accuracy or better fitted with 2.5mm diameter tip and foot with 3.5mm diameter ball. Measuring force 1.5N. Use of a cable release as shown below is recommended.



Sample Required

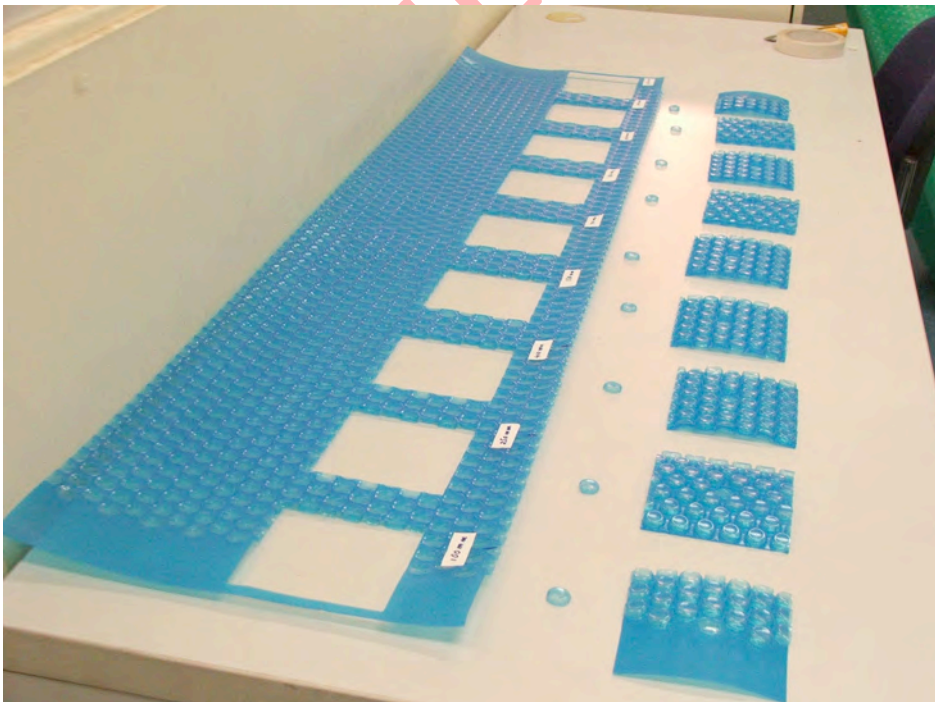
Entire width of bubble material (from Selvedge to Selvedge) x at least 300mm long.

Preparation of test specimen

Condition samples in controlled atmosphere 23C +/- 1 for 2hrs

Method

Cut the material into 9 square pieces (100mm x 100mm) evenly spaced across the width of the sample from Selvedge to Selvedge.



Cut the centre bubble from each 9 pieces (so each bubble looks like a contact lens) and place in the digital micrometer as displayed above. Measure the wall thickness around the bubble at each location shown in Fig 1 below. Record each reading for A,B,C & D. Repeat this for all 9 bubbles. Take the average for all 9 readings to establish the average result of A,B,C & D. The lowest average reading of A,B,C or D represents the overall average Minimum Point Thickness. See Table 1 for recording test figures template.

Figure 1

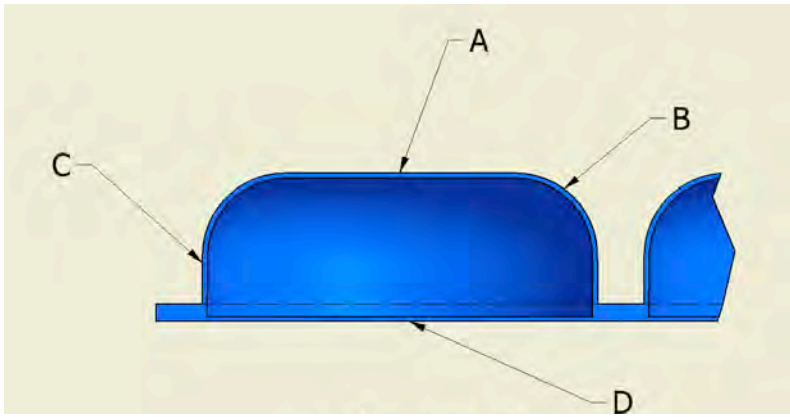


Table 1

Web position of sample in mm*	100	250	400	550	700	850	1000	1150	1250	Average
A										
B										
C										
D										
Result										

* Web Position will change according to material widths

Result

The average minimum value must be equal to or greater than 90 microns to pass the test.

PASCAA TEST METHOD TM-1002: BOUYANCY TEST

Equipment

250cc graduated measuring cylinder

300mm Rule

Laboratory balance

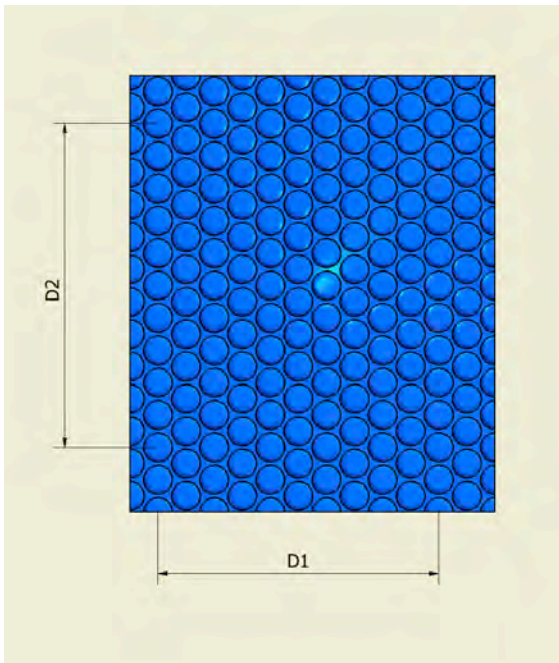
Thermometer

Conditions

23C +/-1C

Method

Determine bubble density. Measure the centre distance between 10 bubbles in each of the machine and cross directions. Record as D1 and D2 (in mm). The values are generally different for each direction. Note that these measurements are to be taken at right angles to each other.

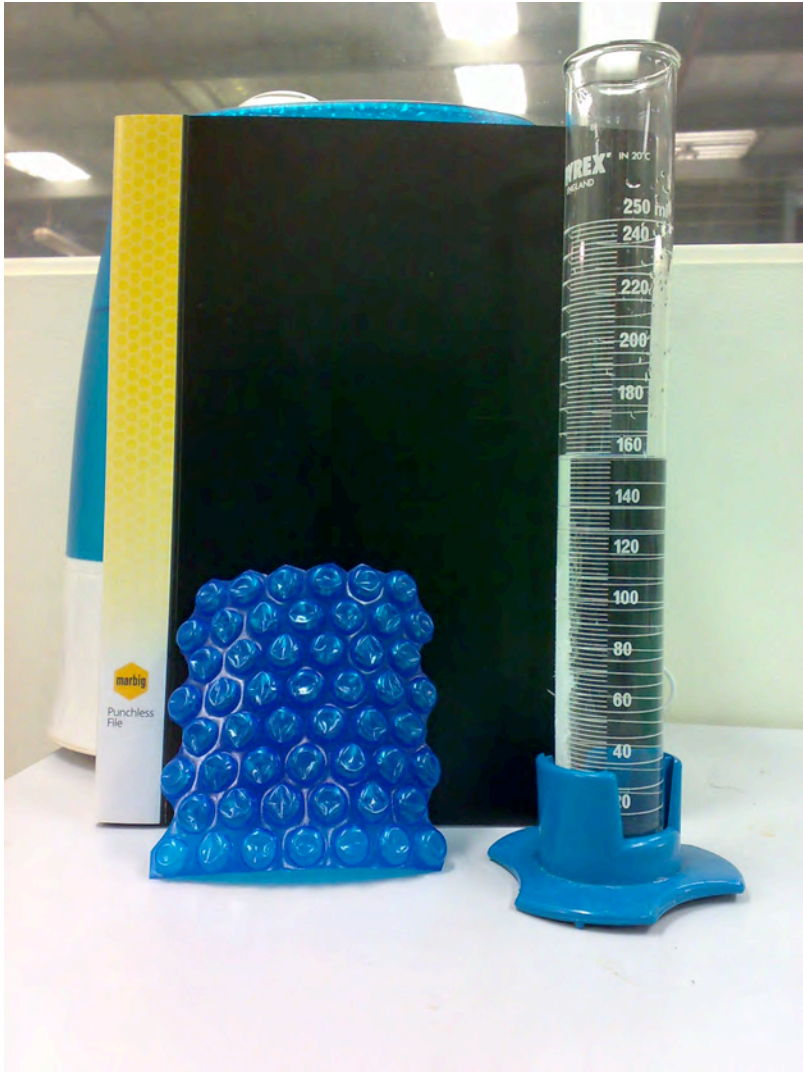


The number of bubbles per square metre is

$$N = \frac{100,000,000}{D1 \times D2}$$

Cut a 125 x 125mm sample of the test material. Remove bubbles at the edge that are cut through as per photo below. Count the number of full bubbles in the specimen and record as B. Weigh the sample and record as W (gm).

Fill the measuring cylinder with water to a depth of approximately 150mm (so it is greater than the sample to be tested). The water must be between 22-24C when the readings are taken. Record the first reading to the nearest cc as V1 (cc).



Fully submerge the sample in the water and ensure that there are no bubbles trapped on the surface of the material. Record the reading of the new volume of liquid including the sample as V2 (cc). The displaced volume of air in the sample material is V2-V1-W

The unit displacement per square metre or buoyancy is:

$$\frac{N \times (V2-V1-W)}{B \times 1000} \text{ lit/m}^2$$

The minimum pass value is 1.5 lit/m²