



PLASTIPACK LIMITED

Manufacturers of Energy and Resource Saving Products

How to select the right pool cover material

Selecting the right material

Plastipack often hear from end users (pool owners) who are concerned about how to select the right cover material for their pool.

With the differences in thickness, colour, bubble design and lifespan the options can make a selection difficult.

This document aims to take you through the options and hopefully guide you to your ideal cover.

This document aims to help by outlining. (Content Page)

- [General benefits all covers provide](#)
- [What difference does the material grade make?](#)
- [Differences due to Bubble design \(GeoBubble™\)](#)
- [What difference does colour have on performance?](#)
- [A guide to Plastipack products lifespans](#)
- [High Performance Guard materials](#)
- [Why do I need a Reflective Storage sheet?](#)
- [Performance guidance chart](#)

Don't worry as long as it is covered!

By covering the pool you are preventing evaporation by 98%+.

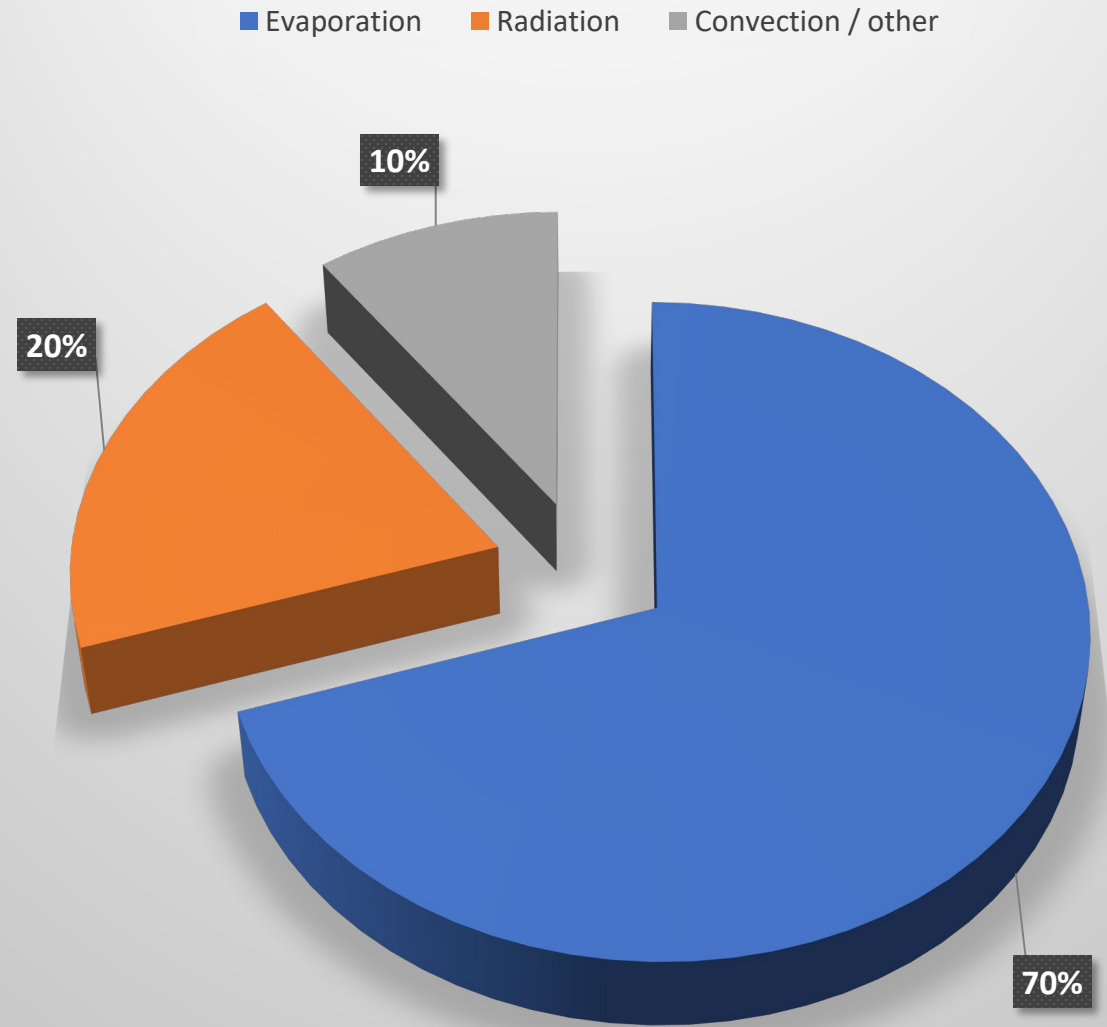
Controlling evaporation by covering your pool will provide savings to your running costs and increased temperatures.

[This is because evaporation results in a loss of both water and heat.](#)

Once the important decision to cover the pool is made the next step is to determine the type of performance you want your cover to provide.

This is determined by the material's optical properties.

Factors responsible for heat loss for outdoor Swimming pools



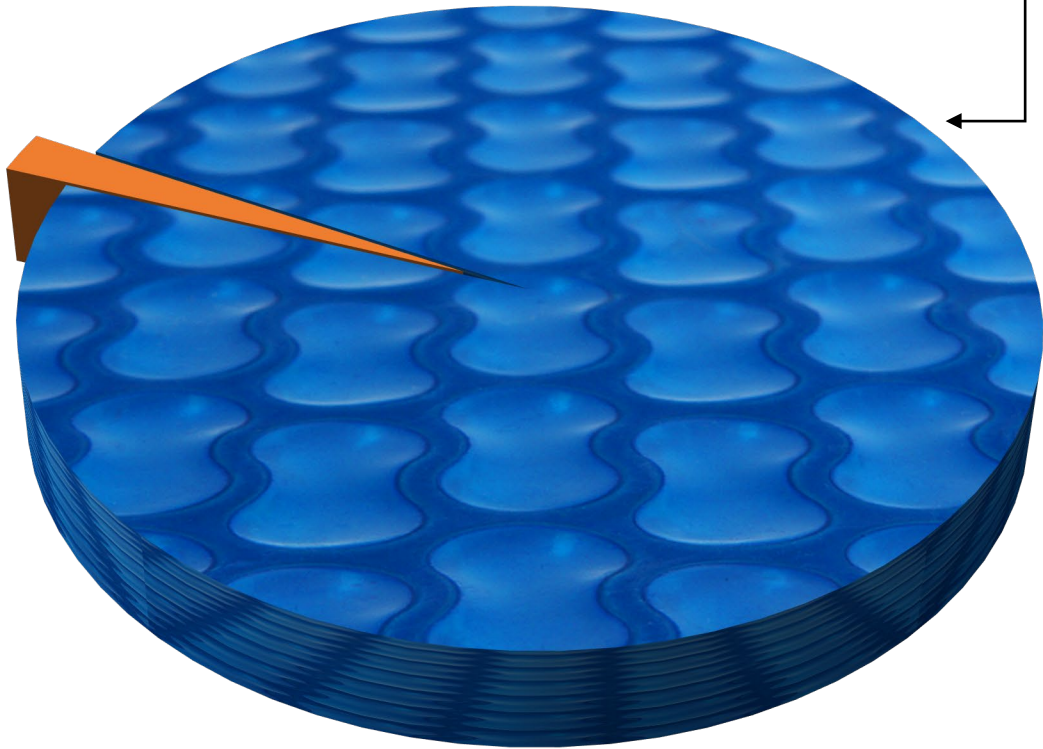
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Evaporation is a energy consumptive process resulting in a reduction in temperature within the pool.


This is know as evaporative cooling.

As such as long as the pool is covered you will see a saving in energy cost.

98% + Reduction in Evaporation when using a cover



 =1 calorie

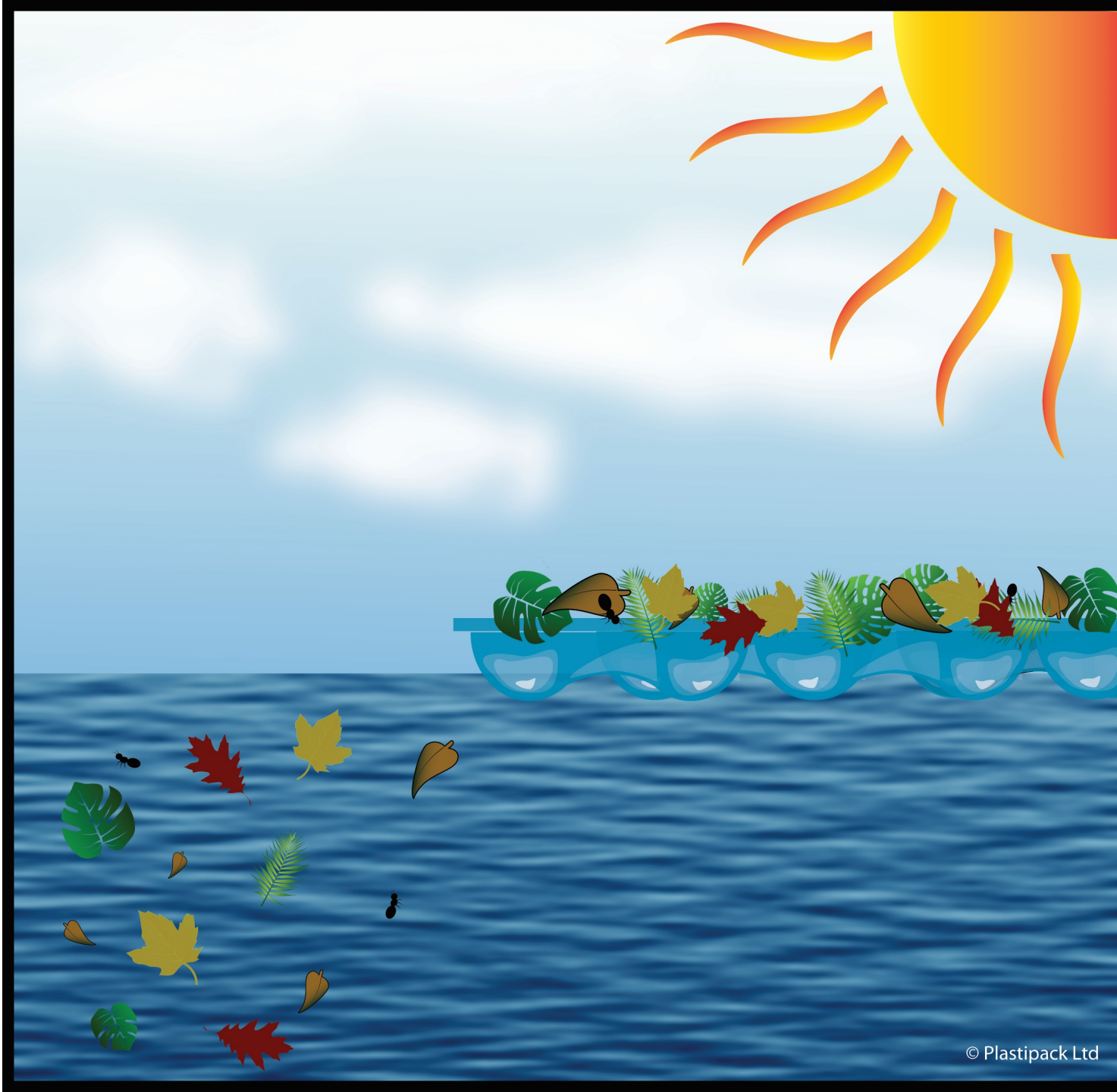

1Cal
Energy Required to heat 1g
of water 1°C

540Cal
Energy consumed through
evaporating 1g of water

All pool covers will prevent debris entering the pool.

This does not only help to keep the pool looking cleaner but reduces the chemical and filtration demand by reducing foreign debris entering the pool.

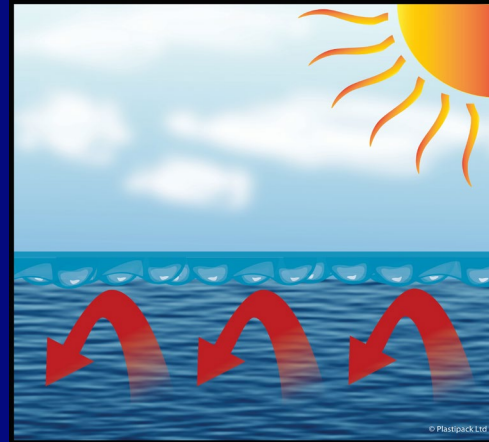
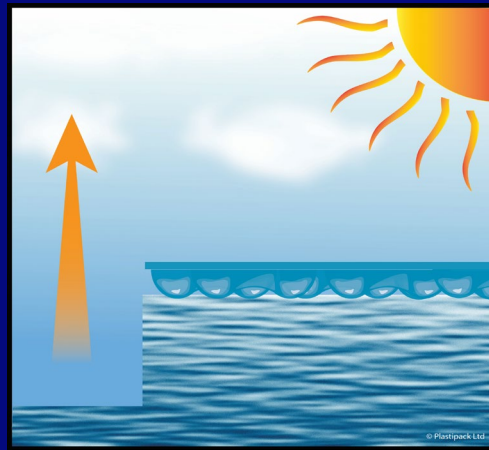
The cover also helps to reduce photolysis, the process of free chlorine being deactivated by sunlight.



These points represent the generic benefits of any cover.

At this point we can look at some more specific traits:

- [Thickness \(grade\)](#)
- [Colour](#)
- [Bubble design](#)
- [Expected lifespan](#)
- [High performance materials](#)

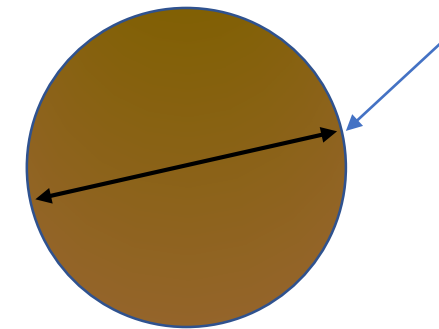
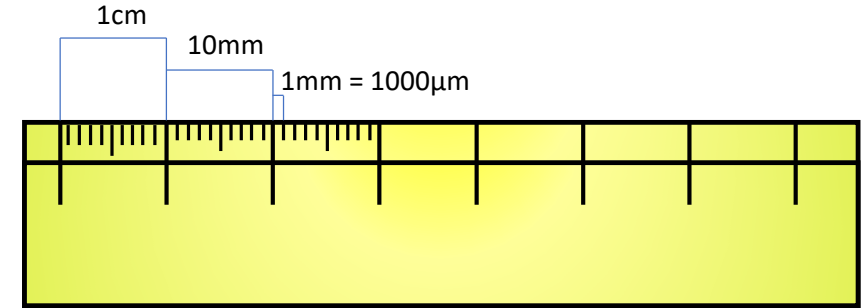


General benefits:

- Eliminates water evaporation by 98% +.
- Retain heat.
- Reduces chemical consumption.
- Reduces energy consumption.
- Reduces debris contamination.
- Reduce the pool's carbon footprint.
- Saves money.

What material Grade means?

- Pool cover materials are often classified by their grades, such as 400grade.
- The “grade” refers to the materials thickness in Microns (μ) or Micrometres (μm).
- A 400grade material has a thickness of $400\mu\text{m}$.



A human hair has a diameter between 50 and 100 micron

What difference does thickness make?

- The thickness of a material is a good indicator of its quality and durability.
- Greater thickness provides resistance to the oxidising effects of the sanitizers within a pool. This is simply because there is more polymer to be oxidised over time.
 - To ensure this, Plastipack distribute the thickness of the material to make the bubble two thirds of the thickness of the material. This has been further improved through the creation of the GeoBubble™ material design.
- A good pool cover material should be no less than 400µm (400grade).
- If you are not using a reel system and fan folding the cover off the pool, you may wish to go no thicker than 500µm to keep the cover a manageable weight.
- Though it does have an effect, thickness is not an indication of expected lifespan.

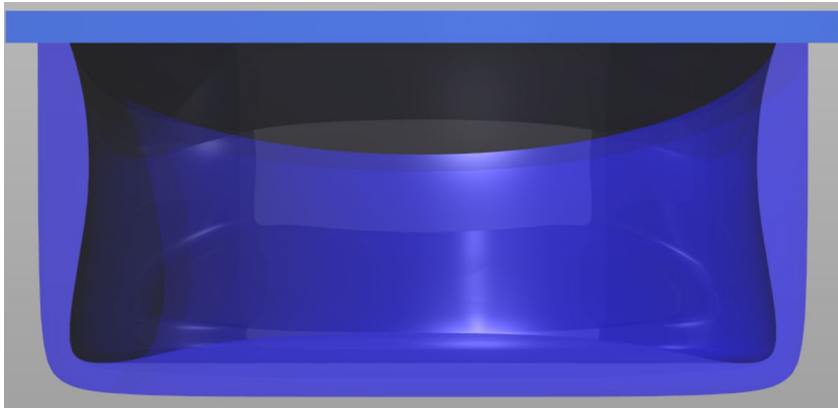
For information on this see: [A guide to Plastipack products lifespans](#)

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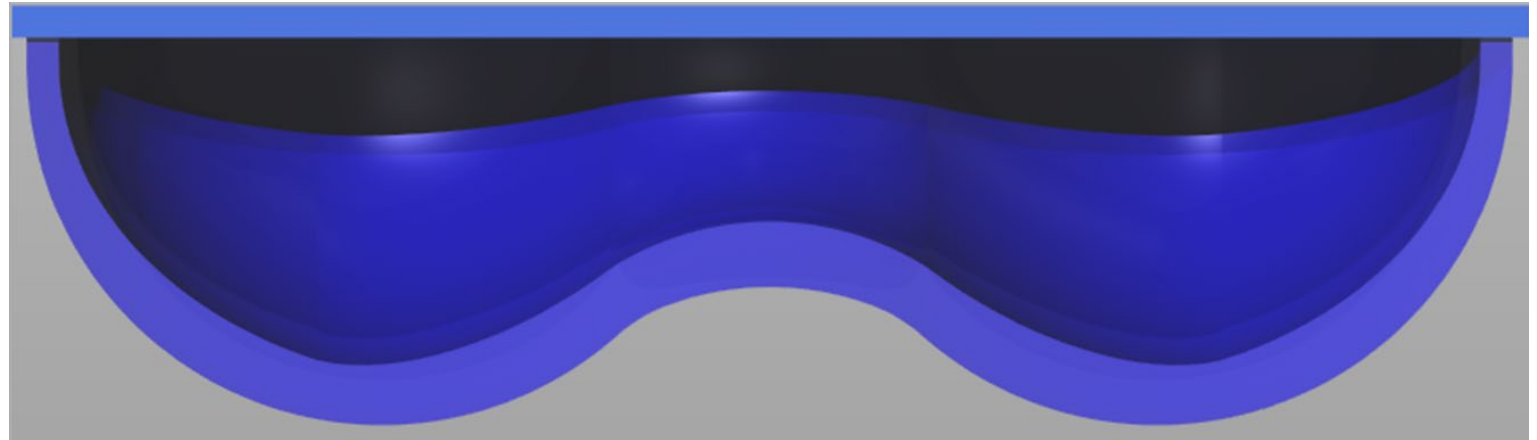
Which Bubble Design?

Select a bubble type to see to find out more about its design.

[12mm standard bubble design](#)

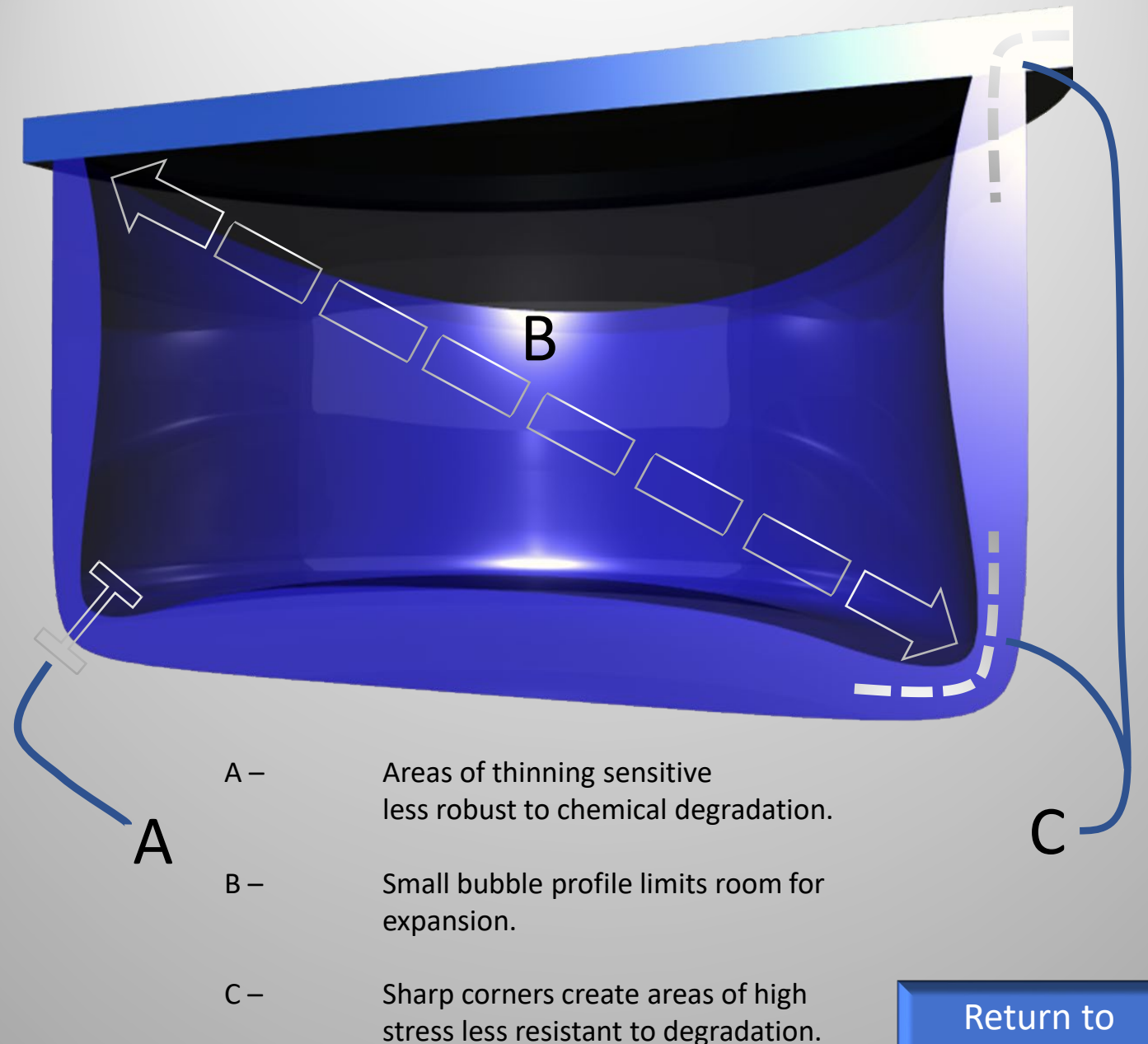


[GeoBubble™ Technology Design](#)

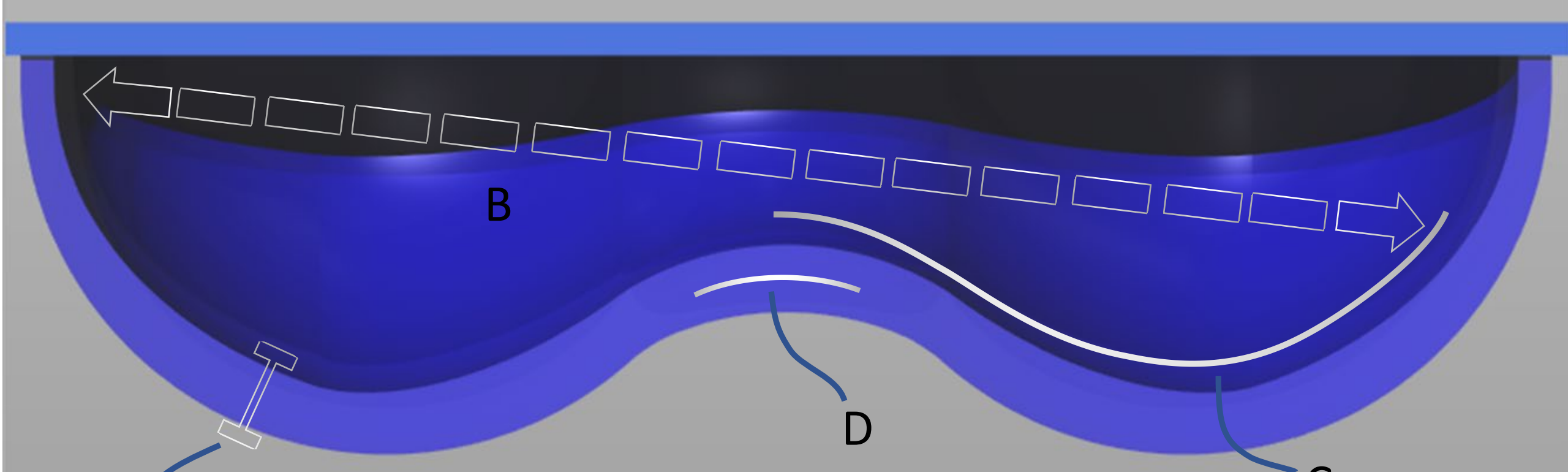


- The traditional bubble design was created for the packaging industry and has some inherent weaknesses.
- These weaknesses limit the materials ultimate longevity.
- Due to this, Plastipack in Partnership with two UK Universities designed the GeoBubble™ material specifically designed for your pool.

[See GeoBubble™ benefits](#)



[Return to
Bubble Design](#)



A



[Click here for more information](#)

A – 50% thicker at its thinnest point to resist chemical attack.

B – Larger bubble profile provides increased room for expansion.

C – Smooth curved structure reduces stresses within the material.

D – Structural arch resists bubble collapse.

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Bubble Design](#)

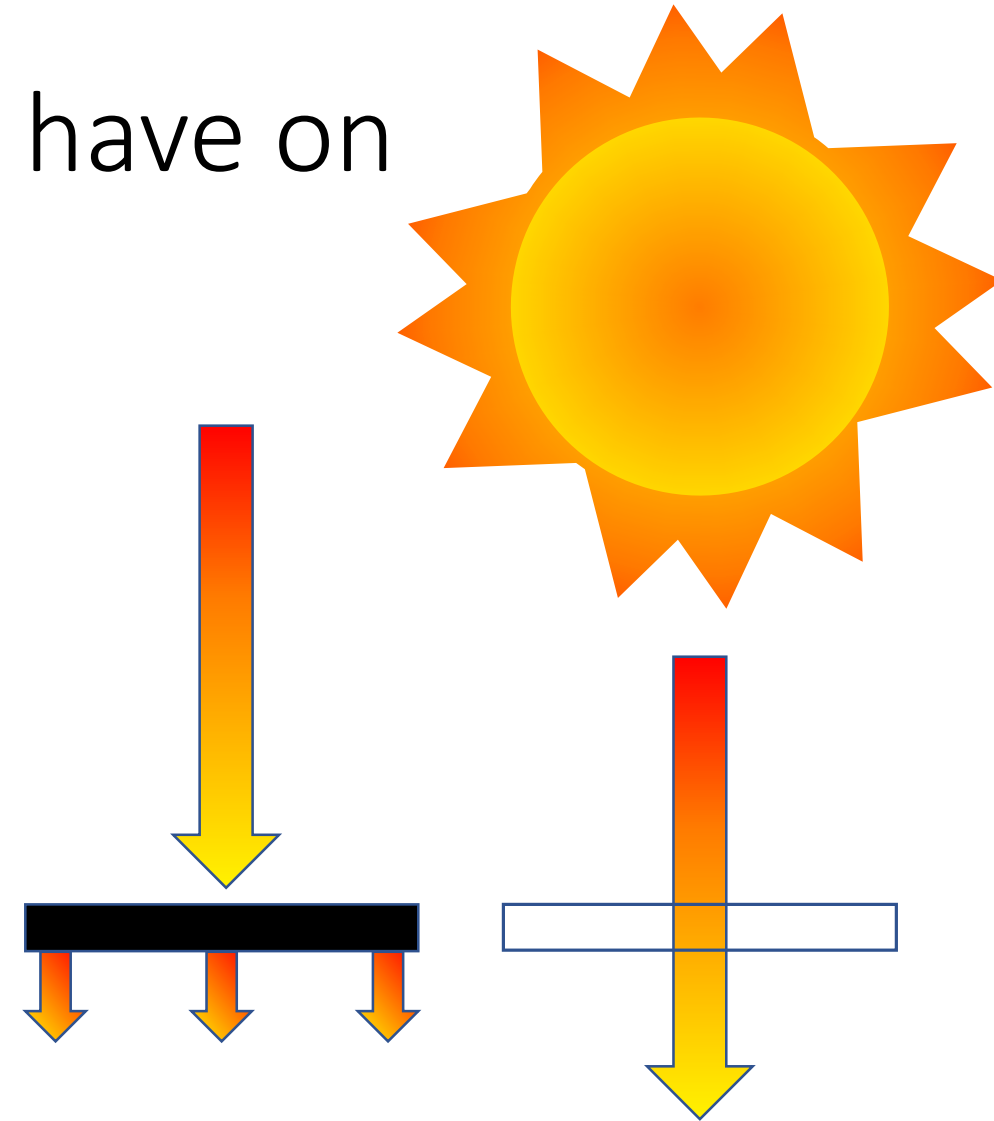
What difference does colour have on performance?

Basic standard cover types:

Most standard pool cover materials fall under these two categories in relation to how they heat the pool.

- **Absorption covers:** Use dark pigments to absorb the sun's energy and pass this to the top surface of the pool. (*conduction*)
 - *Pro: Algae inhibition*
 - *Con: Limited heating efficiency*
- **Transmission covers:** Consist of transparent materials that allow the sun's energy to pass through the covers to heat the pool directly. (*transmission*)
 - *Pro: Good heating efficiency*
 - *Con: Poor algae inhibition*

As you can see the covers optical properties determine the covers potential performance. This is most clearly demonstrated by the [High Performance Guard products](#).



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Product Expected Lifespans:

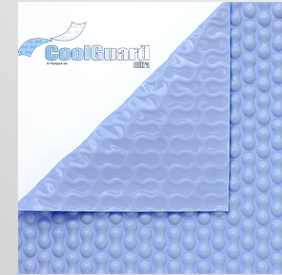
	12mm Bubble	GeoBubble™
Standard Materials		
400micron	2 years	3 years
400micron + weave	2 years	3 years
500micron	3 years	4 years
600micron	3 years	4 years
High Performance Guard Products		
CoolGuard™		6 years +
EnergyGuard™ Selective Transmission		6 years +
Sol+Guard™		6 years +

All Lifespans are set based on a pool within [industry recognised balance](#). A pool cover should always be removed when shock dosing a pool and only recovered once the pool has returned to balance.

The lifespan of a material is determined by its [UV stabilization package](#), this is tailored to the geographic requirements of the environment.

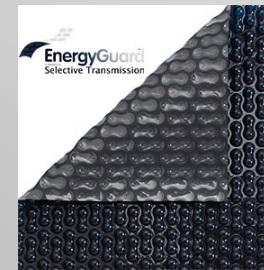
High Performance Guard Materials

- Each of our high performance materials is designed to provide the highest performance for their specific function as well as the [generic benefits](#) all pool covers provide.
- [CoolGuard™ Ultra](#) - Maintains a comfortable cool swimming environment.
- [EnergyGuard™ Selective Transmission](#) – Provides algae inhibition and very good temperature gains.
- [Sol+Guard™](#) - Provides the highest temperature gains to the pool.
- They were designed with the aim of returning the initial investment of their purchase by providing savings to the pool within the first year of use.
- Each of the High performance Guard materials has a expected lifespan of 6 years plus and is offered to fabricators with a 6 year manufacturer's pro rata warranty.



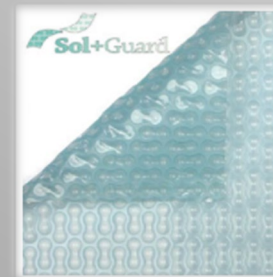
CoolGuard™ Ultra Specific benefits:

- Minimise daily solar gains by 55%.
- Maintain a 10% cooler pool.
- Reduce water temperature by up to 15%
- Reduce energy consumption over to 50%
- Reduce chemical consumption by up to 50%
- Reduce energy consumption by over 50%
- Save money
- 6 year + expected lifespan



EnergyGuard™ ST specific benefits:

- Increase water temperature by up to 7°C
- Inhibits algae growth
- Reduce filtration times by up to 50%
- Reduce chemical consumption by up to 60%
- Reduce energy consumption by up to 60%
- Reduce time spent on maintenance
- 6 year pro rata manufacturer's warranty
- Can be used as a winter pool cover



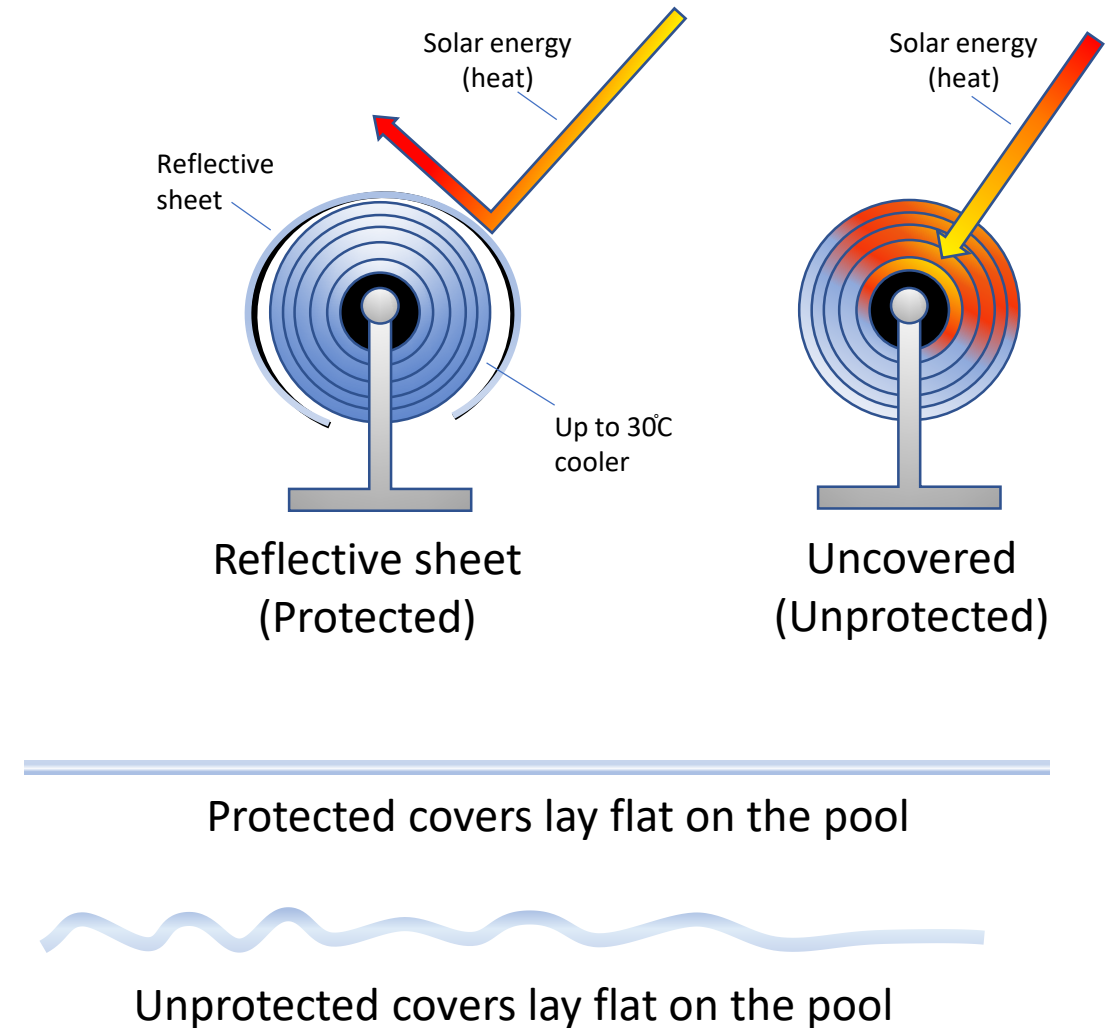
Sol+Guard™ Specific benefits:

- Increase pool temperatures by up to 8°C
- Reduce chemical consumption by up to 40%
- Reduce energy consumption by over 70%
- Save money
- 6 year + expected lifespan

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Reflective storage sheet

- Swimming pool material is a insulator.
- When left layered either on the reel system or folded in direct sunlight the temperature between the layers quickly builds and can elevate past the vicat softening point of the plastic, making the polymers malleable .
- As the material cools it can set to the shape of the reel system.
- The increased temperatures result in damage to the material and impacts on the cover's flatness when deployed on the pool – known as “lay flat”. In extreme cases it can also stick the layers together or degrade the material.
- [For more information visit the Reflective storage sheet page.](#)



Which cover type to select.

The best method of discerning the cover you require is to decide the key issue you wish to address:

Chemical savings, temperature increase, algae inhibition, durability or life span and select a material that best suites your needs!

Most standard materials are designed to be a good all round cover and will provide up to a 2-3°C temperature increase dependent on their optical properties, as well as the standard benefits mentioned previously.

However the High performance material can provide specific benefits to meet your needs.

[See Performance Guidance chart](#)

Performance guidance chart.

Product	Heating the pool	Keeping the pool cool	Algae Inhibition	Evaporation Control	Chemical reduction	Filtration reduction	Heating reduction	Heat retention	Durability	Winter cover	Expected life span
CoolGuard™ Ultra		○ ○ ○ ○		● ● ● ●	● ●	● ●		● ● ● ●	● ● ●		● ● ● ●
EnergyGuard™ ST	● ● ● ●		● ● ● ●	● ● ● ●	● ● ● ●	● ● ● ●	○ ○ ○	● ● ● ●	● ● ●	○ ○ ○ ○	● ● ● ●
Sol+Guard™	● ● ● ●			● ● ● ●	●		○ ○ ○ ○	● ● ● ●	● ● ●		● ● ● ●
Polyweave 400μ	●		●	● ● ● ●	●		○ ○	● ● ● ●	● ● ● ●		● ● ●
Solarweave 400μ	● ●		●	● ● ● ●	●		○ ○	● ● ● ●	● ● ● ●		● ● ●
Standard Light Blue 400μ	● ●		●	● ● ● ●	●		○ ○	● ● ● ●	● ●		● ●

- From the chart we can see that if you desired to provide the maximum temperature gains/ Heating cost reductions. The [Sol+Guard™](#) would be the ideal choice.
- However should you wish to also prevent algae growth and reduce chemical demand, while increasing pool temperatures the [EnergyGuard ST](#) would be a more appropriate choice.
- If your requirement is to maintain a comfortable pool temperature in hot climates the [CoolGuard™](#) would be the optimum cover.
- We can also see that if you are concerned about durability for commercial application for example, the [Solarweave or Polyweave](#) would be a appropriate choice for your consideration.

Key	
High	● ● ● ●
Good	● ● ●
Moderate	● ●
Some	●
Not applicable	



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Thank you

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