

GIVE ME SHELTER:

Protecting against Extreme Weather Conditions using High-Performance Shading Systems from Shade Factor



INTRODUCTION

This year, Australia has experienced a long, extremely hot summer. A report released by the Climate Council outlines that coal, gas and oil burning is the culprit: this is climate change at its most potent, and, as a result, extreme weather events are set to become commonplace.

According to the report, the summer of 2018/2019 was the hottest on record, and Australia can expect more of the same in the summer of 2019/2020: higher temperatures, and hotter and more prolonged heatwaves. Longer term, the Climate Council report indicates that extreme rainfall events may also become more intense, and severe thunderstorms are expected to happen more frequently, too.

Rainfall patterns are already changing; northern Australia has experienced more rainfall across all seasons since the 1970s, while southwestern and southeastern Australia has experienced drier weather from April to October since 1999. According to the State of the Climate 2018 report, there is also evidence that heavy rainfall events are becoming more intense.

Outdoor living is an intrinsic part of the Australian culture, so the impact of climate change on the nation's way of life is likely to be acute. Also affecting life in the great outdoors is the depleted ozone layer over Australia, and, each spring, the ozone layer over the Antarctic region thins, too. As a result, more severe levels of UV radiation get to ground level in Australia compared with other countries, and in turn, Australians are exposed to 15 per cent more UV than Europeans. It's no surprise, then, that Australia has one of the highest skin cancer rates globally – the major cause of which is exposure to UV radiation from the sun.

With the powerful combination of severe heatwaves, rainfall and storms on the horizon, Australians who want to continue to live an outdoors-driven lifestyle will need to do so supported by shading; shading that is high-quality and high-performance, so that it provides optimum protection from intense weather conditions.

The ideal outdoor shading cannot simply look good. In addition, it must protect people from not only extreme heat and sun exposure as they spend time outside, but also from rain and wind. The right outdoor shading also needs to be built to last the distance, no matter what weather conditions it is exposed to.

MATERIALS MATTER

Heavy rains or scorching sunshine, gale force winds or oppressive heatwave: no matter what the conditions, outdoor shading systems that use high-performance materials will afford the user enough protection that they can enjoy their outdoor space.

Part of what makes a fabric high-performance is its ability to reflect rather than absorb sunlight (its UV resistance). Solar energy is short wave and therefore doesn't carry much heat in itself. Heat is produced when surfaces absorb energy from the sun; it then radiates as long wave infrared energy. Short wave solar energy is what causes 65 to 90 per cent of melanoma (which is responsible for 75 per cent of all skin cancer deaths), so fabrics should ideally reflect sunlight rather than absorb it. If sunlight is absorbed by a fabric, it will radiate as long wave infrared energy, causing the shaded area beneath the fabric to heat up.

Reflective fabrics that are high-performance include polycarbonate, plus tightly woven acrylic and high-density, knitted, PVC-coated polyester. These fabrics are also tear-resistant, fire-proof and they have waterproof properties.

Just as exposure to non-visible UV radiation at a range of <380nm is harmful to human skin, it also has an impact on fabrics, causing them to fade and discolour. Therefore shading fabrics that are coated in transparent substances like acrylate are desirable, as they will keep fabric colourfast for years if not decades.

A high-performance shading fabric will also allow air to flow freely in the shaded area. Breathable, acrylic fabrics are an ideal choice: these keep the shaded area cool, letting hot air rise and escape, while allowing light to come in. They are also rot-proof, dirt repellent and light fast.

In addition to fabrics, metals such as aluminium and steel are also highly effective shade louvres. These strong, non-corrosive metals are ideal for coastal locations – plus they possess natural insulating qualities, they allow for plenty of flexible movement and they offer a sleek, contemporary look.

The right fabric will protect the user from wind, sun, rain and dust, but it needs to be supported by a sturdy structure that is equally weatherproof and durable. Due to their sturdiness and weatherproof qualities, aluminium and steel are ideal materials not only for shading, but also for the frames that support them.



BUILT FOR EXTREME WEATHER / ADDITIONAL WEATHERPROOF FEATURES / OTHER WEATHERPROOF MUST-HAVES

Durable, weatherproof materials are only one aspect of effective outdoor shading systems. Thoughtful design features that minimise the impact of adverse weather conditions are another important factor. Integrated drainage systems are one example: using discreet gutters, they allow rainwater to travel through the supporting frame, channeling it away from the awning.

Advanced tensioning systems can optimise a shading system's wind-stability, while also ensuring shading draws and retracts evenly and smoothly. Tensioned shading can be spring-based or cable-tensioned, or they can use gas pistons or bionic arms.

Flexibility is a must-have for outdoor shading systems: this allows the user to tilt, retract or extend shading depending on the weather conditions and their individual needs. Motorised operating systems are ideal, as they are quick and easy to operate.

Built-in sensors, while not a must-have, are a highly useful addition to climate-responsive outdoor shading. Effective sensors will adjust shade positioning automatically in response to weather conditions: on rainy days, or on hot, sunny days, they will shift to provide shade where it's needed, while preventing users and the shaded area from overheating. On cloudy days, meanwhile, they can retract to allow light to penetrate outside and in.





SHADE FACTOR & WAREMA

For more than two decades, Shade Factor has been designing and producing high-performance, durable, weather-proof sun-shading and automation for residential and commercial projects alike. As well as manufacturing their own sun shades, awnings and blinds, they act as agent for leading German-based blinds and shading manufacturer Warema. Both Shade Factor and Warema deliver high-performance outdoor shading systems that are amongst the most effective on the market.

Perea Pergola Awnings

Warema's award-winning Perea P60 awning, along with the Perea P40 and P70 awnings, all use advanced tensioning systems for wind resistance, integrated drainage systems, UV bleaching-resistant fabric, and marine-grade stainless steel components that are built to operate smoothly (including the secudrive® fabric guide rail) and to last the distance. P60 offers the option to integrate lighting, radiant heaters and motorised side screens that enable this pergola awning to transform into a light-filled outdoor room that's ready for any weather conditions.

Lamaxa L60 & L70 Louvre Roof

These slat-roof louvres deliver a flexible, weatherproof shading solution. This freestanding shading system features motorised louvres that can be tilted, opened, closed or retracted via remote control. L60 and L70 are wind-stable, resisting winds of up to 1.1kN per square metre, and they can bear loads of up to 230kg per square metre. The powder-coated aluminium louvre roofs also feature drainage profiles built into one of the structure's beams, channeling rainwater off the shade.

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