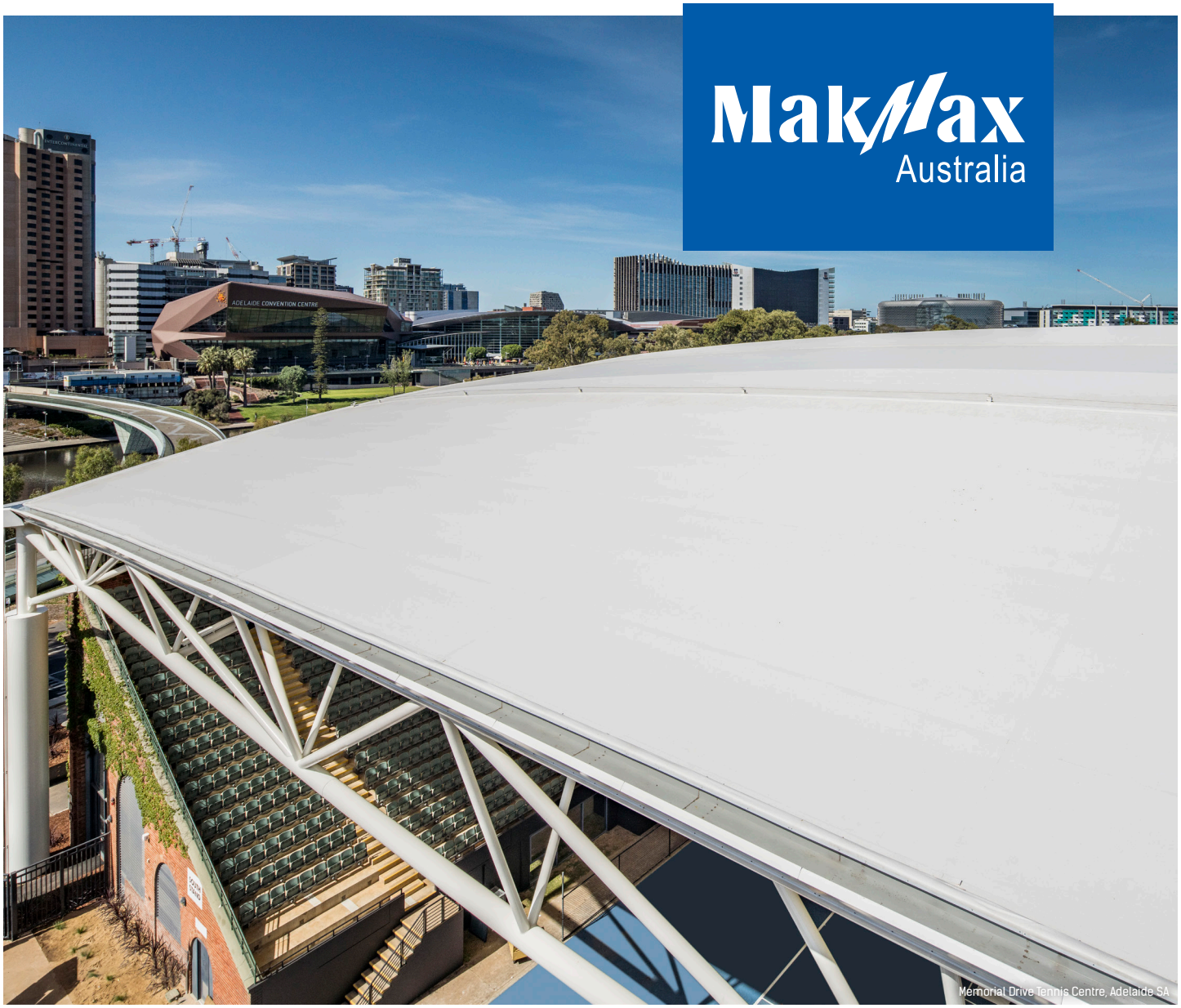


Mémorial Drive Tennis Centre, Adelaide SA

MakMax Australia

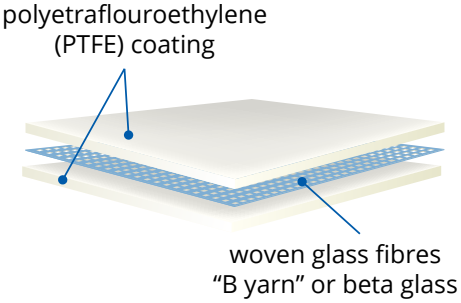
MakMax PTFE Capability

PREMIUM TENSILE MEMBRANE STRUCTURES

PTFE (polytetrafluoroethylene) coated fibreglass fabric is an extremely durable and weather resistant membrane, that lends itself to many bespoke architectural designs and structural applications.

Architectural PTFE combines the strength, flexibility, and fire-resistant properties from the fiberglass mesh, with the unrivaled weatherability and chemical resistance from the polytetrafluoroethylene coating. Overall, PTFE provides the most aesthetic, durable, low maintenance, and translucent fabric option for membrane structures and tensile architecture solutions.

With a confirmed design life of at least 45 years, some of the first PTFE structures built in the 1970's are still standing. MakMax have undertaken mechanical testing of material from a dismantled structure that still exhibited a tensile strength greater than its specified value after 25 years in service.



Design. Engineer. Fabricate. Install.

Reference Projects


Wenty Leagues Bowling Club, Wentworthville NSW


Matagarup Bridge, Swan River, Perth WA


Optus Stadium, Perth WA


Flynn by Crystalbrook Collection Hotel, Cairns QLD


Anna Mears Velodrome, Brisbane QLD


Avalon Airport, Geelong VIC


Centenary Park, South Hedland WA


Karingal Bowls Club, Frankston VIC

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The Benefits of PTFE

STRENGTH & DURABILITY

The woven glass fibre yarns give PTFE membrane its superior mechanical strength. It can span significant distances with minimal secondary supporting elements, making it the material of choice for large lightweight structures.

Being chemically inert, the PTFE coating does not degrade or age under UV exposure, maintaining its strength throughout its lifespan and ensuring the fabric maintains its bright white colour throughout its lifespan.

PTFE fabric can be installed in climates ranging from the frigid arctic to the scorching desert heat, capable of maintaining strength and flexibility in temperatures from -73°C to +232°C.

FLEXIBLE

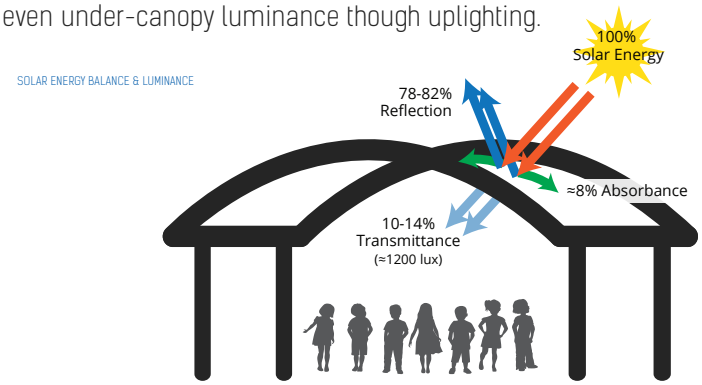
The glass fibre filaments, known as beta glass, are the smallest diameter available in tensile membrane fabrication, and provide the membrane with maximum flexibility.

The fibers are drawn from hot melt glass through platinum dies into continuous filaments, and are then twisted and plied into yarn bundles. The yarns are woven into a wide structural fabric, which is then coated with PTFE to complete the process. Under normal conditions, the fabric behaves elastically and does not undergo significant stress relaxation or creep.

HIGH TRANSLUCENCY

PTFE membranes transmit up to 14% of natural light, reducing the need for artificial lighting throughout the day and creating a natural colour-correct and glare-free environment.

This same property allows for creative visual effects with great impact when backlit at night, while strong reflectivity allows for even under-canopy luminance though uplighting.



COMFORT

PTFE reflects the sun's energy, keeping the air temperature under a PTFE roof much cooler. Transmitting approximately 20% less radiant heat than conventional roofing materials roof, overall air temperature under a membrane roof is more comfortable.

Reduced shade lines and true colour perception due to PTFE's high translucency, offer a glare-free, natural-light feel for people inside a structure.

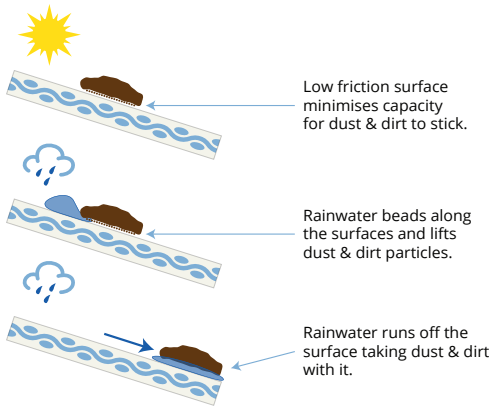

St Peters Lutheran College, Brisbane QLD

LOW MAINTENANCE (SELF-CLEANING)

The coefficient of friction of PTFE is one of the lowest of any solid in existence, meaning almost nothing will stick to it.

The low surface energy of PTFE minimises the capacity of dust, dirt, and pollutants to stick to the surface and are easily washed away during normal periods of rainfall.

PTFE is a hydrophobic material, so water will bead and run-off along natural contours, aiding the self-cleaning properties.



FIRE PERFORMANCE

With noncombustible glass fibre at its core, the PTFE coating on architectural fabrics maintains a very high melting point (around 327°C), there are very few situations where PTFE would be damaged by heat.

In a fire situation, PTFE does not present burning or flaming droplets and will not contribute to flame propagation.

PTFE presents excellent fire performance characteristics to AS1530 parts 2 and 3 (Fire-resistance tests for elements of construction), and also meets and exceeds the most stringent fire codes throughout the world.

SOUND ABSORPTION

The air permeability and flexibility of PTFE membrane helps to absorb sounds waves rather than reflecting them back into the area below the canopy.

The same properties also mean external noise and reverberation will be reduced and filtered, aiding the acoustics of the building and its surroundings.

PTFE Applications

Known for its strength, durability, and its ability to offer a range of translucency in custom fabric structure design, MakMax Australia chooses PTFE for a wide range of applications.

As well as regular PTFE; blackout, low translucency and porous mesh options are available to allow architectural design freedom.

MEMBRANE ROOFING:

High translucency, strength, aesthetics, and the self-cleaning properties of the PTFE membrane, make it the perfect membrane for stadium roofs, bowling green canopies, sports court canopies, sporting club grandstands, and retail or commercial atrium roofing.

SHADE STRUCTURES & AWNINGS:

Strong, long-lasting, stable, and with effective protection against UV, PTFE is ideal for retail walkways and shade areas; hotel and restaurant alfresco dining; COLAs (covered outdoor learning areas) for schools and universities, and public transport waiting areas.

FACADES & INTERIORS:

Prized for its sound absorption characteristics and noncombustible qualities, PTFE has the ability to create architecturally stunning facades and interior paneling or soffits. PTFE Mesh is especially suitable for facades, fostering extremely effective light transmission and heat control.

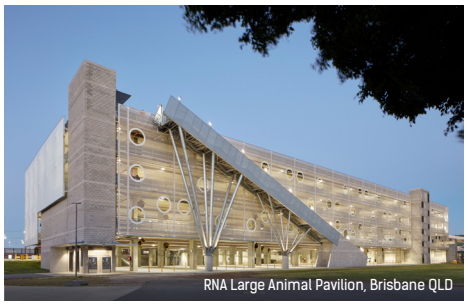

Memorial Drive Tennis Centre, Adelaide SA


Ryde Aquatic Centre, Sydney NSW


JCU Ideas Lab, Cairns QLD


Metricon Stadium, Gold Coast QLD

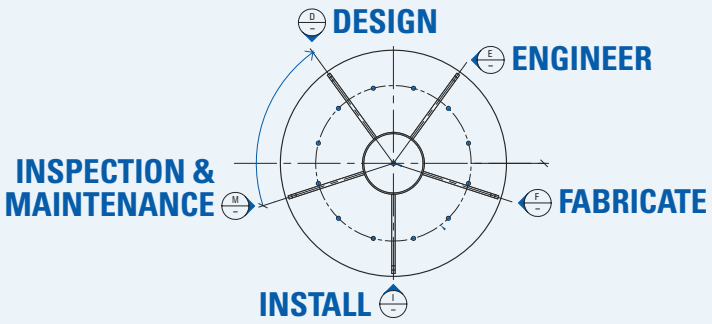

Blaxland Riverside Park, Sydney NSW


RNA Large Animal Pavilion, Brisbane QLD

For more information visit www.makmax.com.au/fabrics/ptfe/

MakMax Australia is the market leader in custom PTFE structures and we are proud to offer our clients a full circle of comprehensive professional service and support;

- In-house designers, engineers & fabrication.
- In-house project mangers & construction managers.
- Agents, partners & installation crews in every state for continuity of service, even during COVID border disruptions.
- In-house qualified engineering inspectors for regular routine maintenance programs.
- In-house maintenance, cleaning and technical support.



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