

FOOTBALL TURF FOR AUSTRALIAN FOOTBALL CODES

A condensed guide to synthetic and hybrid turf technology



Football Turf for Australian Football Codes

Purpose and Context

Australia's football codes, including Football (Soccer), Rugby Union, Rugby League and Australian Rules Football (AFL) are experiencing increasing participation, longer playing seasons and greater demand for access to quality playing fields.

Traditional natural grass fields remain the preferred playing surface for many sports; however, councils, schools, universities and sporting clubs are increasingly challenged by limited field capacity, climate variability, maintenance costs and growing participation demands.



Photo 1: Blackman Park, Lane Cove, designed for Football, AFL, Rugby Union and Cricket.

Synthetic and hybrid sports turf technologies have emerged as practical solutions to these challenges.

Modern football turf systems are specifically engineered to replicate the playing characteristics of high-quality natural grass while providing greater durability, consistency and usage capacity.

Over the last two decades, Australia has progressively adopted synthetic turf technology across all major football codes. Milestones include FIFA-certified football fields, World Rugby-certified surfaces, NRL-compliant facilities and AFL-endorsed community fields.

Today, synthetic and hybrid turf systems form an important component of sports infrastructure planning, particularly where field demand exceeds the capacity of natural grass surfaces.

Why Are All Football Codes Using Synthetic Turf?

The widespread adoption of synthetic turf by Football Australia, Rugby Australia, the NRL and AFL has been driven by several practical factors.

Increased Playing Capacity - The most significant driver is usage. A well-maintained natural turf field may tolerate approximately 20–30 hours of use per week before deterioration becomes significant. By contrast, modern synthetic football turf systems can comfortably accommodate more than 60 hours of use per week. This allows, more training sessions, additional competition matches, school and community use, reduced fixture cancellations; and better utilisation of limited sporting land.

Weather Resilience - Synthetic fields are less affected by drought, water restrictions and excessive rainfall than natural grass. They provide a reliable year-round playing surface, particularly important in regions subject to climate variability.

Consistent Playing Conditions - Modern football turf systems are designed to provide consistent ball roll, traction, shock absorption and surface firmness throughout the year. This consistency assists both player development and competition outcomes.

Reduced Maintenance - Natural turf requires, irrigation, fertilising, mowing, aeration, renovation; and turf replacement. Synthetic surfaces require maintenance but generally involve lower ongoing costs and fewer major renovations over their service life.

Club Sustainability - Reliable field access supports junior development, community participation and club revenues. Synthetic fields minimise cancellations and increase programming opportunities, improving the financial sustainability of sporting clubs.

Sport-Specific Performance Standards - The rapid growth of synthetic turf has been supported by governing body performance standards developed by FIFA, World Rugby, the NRL and AFL. These standards ensure synthetic fields provide similar playing characteristics to quality natural turf surfaces while maintaining player safety.

What Does a Typical Football Turf System Look Like?

A modern football turf field is much more than artificial grass. It is an engineered system comprising several layers designed to work together.

Surface Layer - The visible playing surface consists of synthetic yarn manufactured primarily from polyethylene or polypropylene fibres. These fibres are designed to remain upright, provide durability and replicate natural grass.

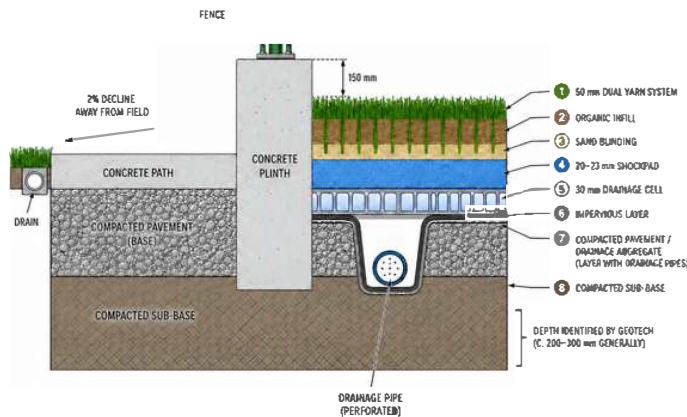
Modern systems generally utilise monofilament yarn, tape yarn; or dual-yarn systems. Dual-yarn systems are increasingly preferred due to their durability and reduced infill movement.

Performance Infill - The synthetic grass is supported by infill materials that stabilise the fibres and contribute to player comfort and ball performance. Current systems typically use silica sand ballast, with a performance infill of, organic infills (cork, wood fibre, olive pits, coconut products), mineral blends. The industry is progressively transitioning away from rubber and plastic-based infills towards organic alternatives.

Shockpad - A shockpad is installed beneath the turf system to improve impact attenuation, player comfort, injury prevention; and promotes surface consistency. Modern football codes increasingly regard shockpads as a critical component of the fields.

Engineered Pavement and Drainage - Below the shockpad sits a civil-engineered pavement system and drainage network designed to provide structural support, remove stormwater, maintain surface stability; and extend field lifespan. The pavement often has an expected life of 20–50 years while the turf surface is replaced periodically.

TYPICAL SECTION OF SYNTHETIC SPORTS TURF FOR FOOTBALL FIELD



Multi-Sport Football Turf for Soccer, Rugby Union, Rugby League and AFL

One of the major advantages of synthetic football turf is its ability to support multiple football codes on a single field. Australia's first fully certified multi-sport football turf facility was delivered at Moore Park, Sydney,

where the field achieved certification for, Football (Soccer); small-sided football; Rugby Union; and Rugby League.

For Rugby Union, World Rugby now requires a minimum pile height of approximately 50 mm, with many Australian practitioners recommending 60 mm systems for open community facilities. The 60mm system allows all the sports to be played on the same surface, and also is more forgiving in infill migration etc. The result is a highly versatile facility capable of supporting, community training, competition matches, school sport and high-performance programs.

Hybrid Sports Turf – The Best of Both Worlds?

While synthetic turf provides additional durability, many elite sporting organisations still prefer natural grass. Hybrid turf systems were developed to bridge this gap.

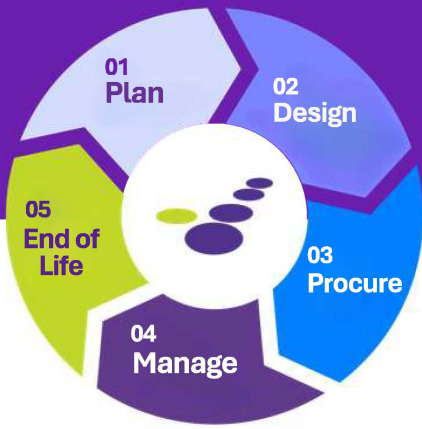
Hybrid sports turf combines natural grass with approximately 5% synthetic reinforcement fibres. The playing surface remains predominantly natural grass, but synthetic fibres provide additional strength and stability to the rootzone and playing profile. The objective is to achieve, natural grass aesthetics, natural ball behaviour, improved wear tolerance, greater field availability; and faster recovery after use.

The synthetic reinforcement strengthens the turf profile and protects against excessive wear in high-use areas such as, goal mouths, centre circles, scrumage zones; and high-traffic training areas. Hybrid systems often accommodate significantly greater usage than conventional natural turf.

Hybrid reinforcement supports root development and improves the turf's ability to recover from, intensive matches, training loads, wet weather; and seasonal stress. This option in high wear areas can add a further 20% of usage time or intensity in a typical week which could add a further 5 hours of play.

The future of football surfaces is unlikely to be a choice between natural or synthetic. Rather, facility owners will increasingly select the surface type, natural, hybrid or synthetic, that best aligns with participation demand, performance requirements, climate conditions and long-term asset management objective. A multi-sport surface is here now.

Recommendations



The Sports & Play Industry Association (SAPIA) brings together the organisations that create the places where people of all ages and abilities can play, move and participate. Through professional standards, industry leadership and innovation, we are building and maintaining better places for a more active world.

To provide these SAPIA Insight Notes, we have partnered with Smart Connection Consulting to provide the latest technical knowledge on the issues that the community are keen to understand better. These notes are based around the NSW & SA Governments Frameworks for Decision Making for Synthetic Sports Fields.

Plan

- Understand demand for the sport and the type of usage to determine the type of grass, whether that be natural, hybrid, or synthetic.
- Determine if other sports can use the field, such as both rugby codes, AFL, cricket, or football (full-sized and mini-fields)
- Identify the geographical location based on supporting natural grass fields around it.
- Appreciate the level of play for the field, which will determine the performance needs.

Design

- Consider the whole-of-park design, not just the field of play.
- Ensure design captures contemporary environmental design to complement performance and durability needs.
- Explore use of multi-use and multi-sport options.
- Design for whole of life, not just construction and installation.

Procure

- Assure that tenderers have a certified product to the International Federation Standards, with experience of construction with similar sites.
- Ensure that all additional performance requirements are stated clearly in either a Design Finalisation Contract or Detailed Design to reduce risk on the purchaser.
- Conduct site visits and explore with network, regarding quality delivery.

Manage

- Develop a program strategy to meet demand and the ability of the surface to cope with durability..
- Management program for the whole facility needs to be developed, including the field of play and surrounding areas.

End of Life

- Prepare for end-of-life planning at the planning and design stage.
- Monitor performance and agreeing to explore “pushing out” the replacement date.

To understand how SAPIA can assist you in making a difference to your projects and the community understanding of this technical subject please contact the SAPIA office at office@sapia.org.au or on our website www.sapia.org.au.