

MAINTAINING SYNTHETIC SPORT SURFACES

Ensuring safety, performance and ability to achieve life expectancy



Maintaining Synthetic Sport Surfaces

Purpose and Context

Sporting surfaces are often evaluated by how they perform on opening day. However, the long-term success of any sports facility is determined not solely by its construction, but by how it is managed throughout its life. Maintenance is increasingly recognised as one of the most important factors influencing:

- Player safety
- Environmental performance
- Community satisfaction
- Asset longevity
- Climate resilience
- Circular economy outcomes
- Whole-of-life cost

For local government, schools and sporting organisations, maintenance should not be viewed as an operational cost. It is an investment in preserving community infrastructure, protecting public funds and reducing future environmental impacts.

The most sustainable sports surface is rarely the newest one. It is usually the surface that is maintained well enough to achieve or exceed its intended design life

Why Maintenance is Becoming More Important

Historically, maintenance was primarily concerned with appearance and playability. Today, maintenance has become a strategic issue because it influences:

Safety and Performance

Well-maintained surfaces reduce injury risk, preserve playability, and ensure user satisfaction. This is critical for local governments managing high-footfall, multi-sport precincts.

Extended Life Expectancy

Synthetic surfaces that receive regular brushing, grooming, decompaction, and repairs last significantly longer. Some high-use areas require up to 2–3 hours of maintenance for every 30 hours of use.

Warranty and Certification Compliance

Major suppliers require documented maintenance to uphold warranties and international certifications, such as FIFA, FIH, and World Rugby. A neglected surface can void both.

Environmental Protection - Well-maintained facilities significantly reduce environmental risks. Maintenance reduces infill migration, microplastic loss, weed growth, water and landscape contamination and supports sustainable practices that minimise ecological impact.

Climate Resilience - Maintenance now plays a critical role in ensuring facilities remain resilient under changing climate conditions. Climate change is increasing exposure to heatwaves, intense rainfall, flooding, drought, storm events,

Asset Stewardship - Cost savings over time

Routine and preventative care reduces the need for expensive, reactive repairs. The difference between a field lasting 8 years and 12 years, can represent hundreds of thousands of dollars in deferred renewal costs

Maintenance as a Sustainability Strategy

The sustainability conversation often focuses on, materials, manufacturing and recycling. Yet one of the most effective sustainability strategies is extending asset life. Every additional year achieved through good maintenance can:

- ✓ Reduce waste
- ✓ Reduce embodied carbon
- ✓ Reduce replacement costs
- ✓ Improve return on investment
- ✓ Delay resource consumption

This concept is often referred to as “*The Most Sustainable Asset is the One You Don't Have to Replace*”

The Hidden Cost of Deferred Maintenance

One of the most common misconceptions is that reducing maintenance saves money. In reality, reduced maintenance actually means deferred maintenance frequently creates:

Financial Costs

- Premature replacement
- Increased repair costs
- Warranty disputes
- Surface reconstruction

Environmental Costs

- Increased waste
- Greater resource consumption
- Earlier replacement cycles
- Higher embodied carbon

Community Costs

- Reduced availability
- Safety concerns
- Loss of confidence
- More closures

Types of Maintenance

Maintenance means the routine, scheduled and responsive work needed to keep a surface safe, clean, even, resilient and fit for purpose.

For synthetic turf this may include inspection, litter removal, brushing, grooming, infill management, seam checks, decompaction, stain removal, weed or algae treatment, drainage cleaning and monitoring of field edges.

It also includes user behaviour, record keeping, contractor capability and budget planning. The right maintenance regime depends on the surface type, age, usage intensity, surrounding trees, drainage design, infill system and sport-specific wear patterns.

- **Level 1- Reactive Maintenance**

Problems fixed after failure and can include emergency repairs, frequent complaints and are at high cost.

- **Level 2 - Daily Monitoring and Grooming**

Pre-use walkovers, litter removal, and top-ups in high-wear zones, such as penalty spots and corner flags, help prevent damage

- **Level 3 - Routine Brushing and Decompaction**

Timetabled grooming keeps fibres upright and infill evenly spread. Deep cleaning removes debris and improves drainage and safety.

- **Level 4 - Scheduled Maintenance and Repairs**

Biannual renovations, seam checks, and infill top-ups extend system performance and reduce injury risk. Older surfaces require increased attention.

- **Level 5 - Predictive Monitoring and Actions**

Embracing technology and monitoring identify issues before they occur, including surface analytics, wear mapping and drainage monitoring

In addition:

- **Surface-Specific Maintenance Guides**

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- **Equipment and Training**

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Design to Reduce Maintenance Burden

Innovative design and construction can minimise long-term maintenance.

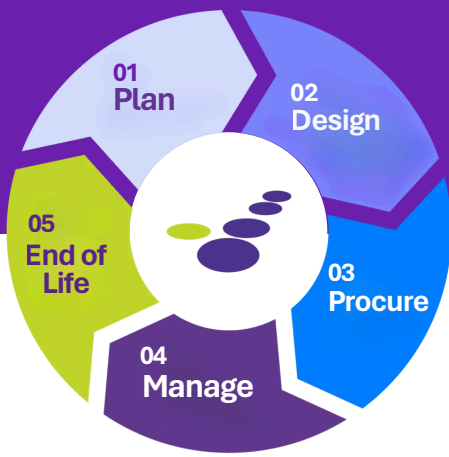
- Dual-yarn or tape-yarn systems reduce brushing frequency.
- Shock pads lower infill requirements and improve drainage.
- Subsurface drainage prevents infill migration and microplastics.
- Site fencing, shoe-cleaning mats, and sealed seams help contain debris.

Routine Service Care

The routine service care will normally be carried out by clubs, government, or the sports, and these routines should occur pre- and post-training or competition to ensure performance can be adhered to. This may include:

- Inspect before and after heavy use, storms and events.
- Remove litter, leaves, twigs, gum, spills and organic matter quickly.
- Brush or groom to lift fibres and redistribute infill.
- Check high-wear areas such as goals, corners, entrances and coaching zones.
- Top up infill where needed and avoid over-grooming that may damage yarn.
- Treat weeds, moss or algae with manufacturer-approved products.
- Repair seams, line markings and small defects early.

Recommendations



Smart Connection Consulting has embraced and enhanced the NSW Department of Planning, Housing and Infrastructure and the South Australia SALGRSN Decision Making Guidelines with the AILA Climate Positive Design framework to produce a 5 stage process to help clients understand proper maintenance for sports surfaces.

Plan

- Treat maintenance as a core project cost.
- Prepare an asset management plan before opening.
- Define operating hours, booking intensity and user responsibilities.
- Set inspection, cleaning, grooming and renewal schedules.
- Budget for routine work, specialist work and annual renovation.
- Include environmental controls, data collection and review triggers.

Design

- Design to make maintenance easier and more effective.
- Provide safe access for specialist machinery.
- Reduce high-wear stress through layout, goal storage etc
- Include brush trays, edge barriers, and practical waste points.
- Ensure drainage, filters and pits can be inspected and cleaned.
- Select yarn, infill, shockpad and backing systems that support durability.

Procure

- Require a site-specific maintenance manual, not a generic document.
- Confirm warranty conditions and required maintenance frequencies.
- Specify training at handover for council staff, clubs and contractors.
- Require equipment lists, approved chemicals and emergency repair procedures.
- Include performance testing, defects obligations and maintenance demonstrations.
- Procure contractors with synthetic surface and environmental management experience.

Manage

- Keep maintenance records for every inspection and service.
- Monitor infill depth, pile direction, hardness, traction, seams and wear spots.
- Schedule brushing, grooming, deep cleaning and decompaction
- Check stormwater capture, filters and field edges regularly.
- Give users clear rules when using the space
- Review performance annually and adjust the maintenance plan as the surface ages.

End of Life

- Use maintenance records, not appearance, to guide renewal timing decisions.
- Monitor usage, repairs, drainage, testing, feedback, shedding, seams and compaction.
- Plan funding, environmental controls, removal, recycling or disposal early.

To understand how we can make a difference to your projects arrange a free informed conversation with Martin Sheppard.
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