Why choose natural turf over plastic alternatives?

Synthetic turf is a growing threat to the environment, human health and wellbeing.

This product is often falsely promoted as an environmentally friendly option and installed at alarming rates in schools, aged care facilities, public parks, sporting fields, suburban back yards and on verges.

We feel it is our obligation and duty of care to educate our communities about the hidden dangers, allowing them to make informed decisions.

Read on for some disturbing facts ...

Contact Turf Australia for more information.
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How much do you really k

Some Frightening Synthetic Facts...

- On average one roll of synthetic turf weighs between 145kg and 220kg (depending on the density of the weave), and it covers 73 square metres of surface area. The soil beneath becomes contaminated, dead earth.
- One 220kg roll of synthetic turf equates to 39,820 single use plastic bags or 374,000 plastic drinking straws.
- One square metre of plastic turf equates to 545 single use plastic bags or 5,123 plastic drinking straws.
- Synthetic grass fibres are made from polypropylene (13.7%) and polyethylene (86.3%). These are petrochemical products and the most widely used plastics in the world.
- Synthetic turf has a lifespan on average of approximately 7-10 years before being replaced. This material cannot be recycled in Australia and inevitably ends up in landfill.
- All synthetic turf contains toxic 'forever chemicals' that are released continually in the form of greenhouse gasses — this chemical emission occurs at a higher rate when exposed to a heat source (the sun). It is absorbed through the skin, inhaled, ingested, and can be absorbed through open wounds.
- Internationally, the European Union, the UK and parts of the US have all taken steps toward banning synthetic turf and rubber crumb due to fears for its impact on the environment and human health.

The Long Term Impact of Synthetic Micro Plastic Particles...

- Synthetic turf and its infill deteriorate during its lifetime and breaks down into meso-, micro- and nano plastic particles. The impact of the spread of these small pieces of plastic (and rubber) into the environment is far reaching and well documented, including evidence of microplastic (originating from artificial grass blades) being present in rainfall.
- Meso-, micro- and nano plastic particles are so common in the environment now, that it has infiltrated human diet. These tiny pieces of plastic are now found in human digestive systems, breastmilk and in the lungs and stomachs of foetuses.
- FIFA 2017 estimates that each synthetic sport field typically loses an average of one to five tonnes of plastics into the environment every year.

Synthetic Infill and Environmental Damage...

- The infill material most commonly installed under synthetic turf (to provide a more "natural" cushioned feeling underfoot) is 'rubber crumb' made from waste tyres. This contains a toxic cocktail of chemicals including heavy metals, zinc and arsenic.
- A single artificial turf field utilises over 200,000 kilograms or 57,000 tyres for infill of which the health risks are still not completely known.

Synthetic turf contains toxic, 'forever chemicals' dumped in landfill when replaced.

$1m^2$ synthetic turf = 5,123 plastic drinking straws or 545 single use plastic bags

The European Union, UK and parts of US have taken steps toward banning synthetic turf due to the fears of the impact of rubber crumbs on the environment and human health.

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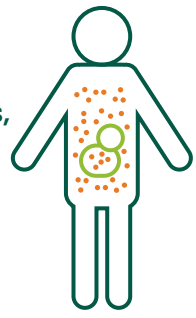

know about synthetic turf?

- Artificial grass and rubber infill have been found to contain as many as 16 PFAS compounds. This is a group of Persistent Bio-accumulative and Toxic manufactured chemicals (PBTs) used to make fluoropolymer coatings for the purpose of heat, oil-, grease-, stain- and water resistance. PFAS chemicals do not readily biodegrade ("forever chemicals"), are highly mobile, bio-accumulate in food chains, and are highly toxic to the environment.
- In its most definitive regulatory action taken to date, the Australian Commonwealth has banned the import, use and manufacture of some of the more prominent types of PFAS (PFOS, PFOA and PFHxS) effective from 1 July 2025 — synthetic turf and rubber crumb infill, however, were not mentioned in this action.

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For more information, visit **www.turfaustralia.com.au** for a full **Resources Library** dedicated to the topic of synthetic turf.

- According to the NSW Chief Scientist & Engineers report 2022, the stormwater generated from synthetic fields may contain hundreds of kilograms of turf fibres lost each year. This contaminated stormwater may contain chemicals including Zinc and PAHs (Polycyclic aromatic hydrocarbon). The most common PAH is naphthalene which is found in mothballs.
- PFAS chemicals leach into the ground causing contamination of the soil under and surrounding the plastic surface. This contamination affects waterways and all surrounding aquatic-, bird- and animal life.

Synthetic Infill and the Threat to Human Health...

- Of 306 chemicals identified in rubber crumb, 197 met the theoretical criteria for cancer causing carcinogens and Endocrine Disruptor Chemicals (EDCs). Endocrine disruptors are chemicals that block or interfere with the body's hormones, commonly causing fertility problems, endometriosis, early puberty, altered nervous system function and diabetes to name a few.
- In the United States, the 'Agency for Toxic Substances and Disease Registry' (ATSDR) states that PFAS have the potential to impact on human immune response, cause increases in cholesterol levels, cause changes to liver enzymes, increased the risk of pregnancy-induced hypertension and preeclampsia, small decreases in birth weight and an elevated risk of kidney and testicular cancers.
- A Safety Data Sheet (SDS) is available for many potentially harmful chemicals and materials. It outlines chemical composition and identifies risk to human health. This document is aimed at informing those who work with or are in contact with potentially harmful materials about the associated risks and dangers, and provides the appropriate safety protocols to avoid.

Continued >

The NSW Chief Scientist and Engineer's report states:

"The total microplastic pollution generated from infill loss through waste disposal, surface drains, internal drains and into surrounding soil and grass was calculated between 18,000 tonnes and 72,000 tonnes per year."

A Safety Data Sheet (SDS) is available for many potentially harmful chemicals and materials. It outlines chemical composition and identifies risk to human health. Hand sanitiser has an SDS — Synthetic turf does not.

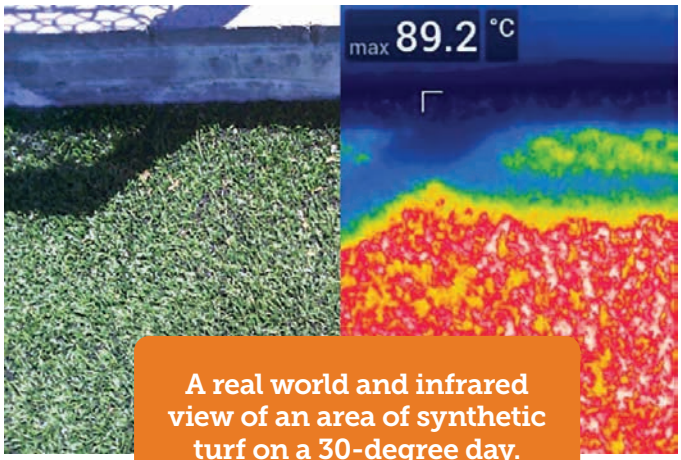
The Synthetic Heat Impact...

- Urban Heat Island Impacts (UHI)s: Synthetic turf radiates heat, affecting thermal comfort. This creates "urban heat islands", making homes (and if there is collective use of synthetic turf) entire suburbs warmer. This combination of sensible heat flux and warmer air temperatures results in far higher energy consumption for cooling due to increased ambient temperatures.

When a natural turf field is replaced with synthetic turf, the land is essentially switched from cooling the surrounding atmosphere, to actively heating it.

- 'When a natural turf field is replaced with synthetic turf, the land is essentially switched from cooling the surrounding atmosphere, to actively heating it.'
  The NSW Chief Scientist and Engineer.
- Studies conducted by the Natural Turf Alliance found a synthetic turf field in Sydney measured at 88°C when outside temperatures were only 28°C. Such extreme temperatures pose a serious health hazard, especially to young children. These temperatures can cause second and third degree burns and significantly increase children's risk of serious heat-related illnesses.
- In all studies conducted, synthetic turf fields, playgrounds and backyards are always found to be significantly hotter than concrete and asphalt.

(Image supplied: Sebastian Pfautsch)



A real world and infrared view of an area of synthetic turf on a 30-degree day.

WHY NATURAL TURF IS THE BEST CHOICE...

Cooling effect

The temperature on a green lawn in summer can be 10°C less than bare soil, 20°C less than asphalt, concrete or pebbles and **40°C less than synthetic grass!**

Reduces erosion

Australian Standard 5181 details the use and installation of turf as an **erosion, nutrient and sediment control measure.**

Environmentally friendly

Turf improves water quality by filtering run-off water and it reduces greenhouse gases by absorbing carbon dioxide and producing oxygen.

Promotes wellbeing

Open greenspace **promotes physical exercise, improves mental health and enhances the** sense of community.

Uses less water than you think

With many different turf types and varieties to choose from, **drought tolerant and water efficient options are available.** Turf grows well using recycled water and can be more water efficient by the incorporation of compost and/or water saving crystals.

Natural and adds value

Turf self-replenishes, is biodegradeable, provides a natural fire barrier, reduces noise and **can increase home values by up to 18%!**

Cheaper than synthetic alternatives

Compared to the total cost of synthetic sporting fields over 25 and 50 years, **natural turf fields are cheaper to install and maintain** in all sports, except tennis*.

*(*Research conducted by the Department of Sport & Recreation, Government of WA)*

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About Turf Australia

Turf Australia is a Peak Industry Body representing 230 turf growers across Australia. We support and advocate for our industry and are committed to ensuring its success and prosperity now and for future generations.

Our industry brings to life naturally green spaces and as such the wellbeing of our environment forms the foundation for all we do — our aim is to ensure an ecologically sustainable future for our growers, their children and grandchildren.

The information contained in this document, is based on scientific facts and evidence-based findings by reputable scientists and environmental organisations.

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