



REPORT TITLE:	Council Position Statement on 3G Artificial Pitches
REPORT OF:	Executive Lead Member for Resources, Climate Change and Economy Cllr Michael Hoy

REPORT SUMMARY

Work has been undertaken by Officers to develop a suitable 3G pitch offering, however, the Administration has raised concerns regarding the environmental impact of 3G pitches.

The below report sets out the current environmental issues, and sets out a draft position statement for the Committee to consider.

RECOMMENDATIONS

To recommend to the Executive that:

- R1 - The draft position statement as set out in paragraph 5.1 is adopted by the Council.**

SUPPORTING INFORMATION

1.0 INTRODUCTION

- 1.1 In 2021, as part of a granted planning permission to uplift an existing development to land north of London Road, Rayleigh, an associated s.106 Agreement required a commuted sum of £820,250 (index-linked) to be made available upon request by the Local Authority for the provision of an off-site sports pitch to off-set the loss of playing fields in the new development.
- 1.2 The s.106 agreement defined the Off-Site Sports provision to mean a senior 40mm 3G pitch (106x70m in size) with associated fencing and sports lighting.

- 1.3 Initial work has been undertaken by Officers to develop a suitable 3G pitch offering, however, the Administration has raised concerns regarding the environmental impact of the 3G pitches.
- 1.4 In September 2023 the European Commission completed the adoption of the EU REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals) restriction on the sale of intentionally added microplastics onto the European market, which include rubber infills for 3G pitches.
- 1.5 The Commission has confirmed an eight-year transition period before the new restriction becomes effective and from October 2031, rubber crumb infill will not be available for purchase within the EU.
- 1.6 The below report sets out the current environmental issues, and sets out a draft position statement for the Committee to consider.

2.0 BACKGROUND INFORMATION

- 2.1 Following discussions between partners and key stakeholders, including the Grounds Management Association, Sport England, Sport Scotland, Sport Wales, Football Foundation, The Football Association, and wider partners, a joint statement was produced relating to the use of rubber crumb in 3G pitches and the sustainability of artificial grass pitches¹.

The joint position statement, updated as of April 2023, below:

- 2.2 *“Artificial grass pitches (AGPs) are recognised as a durable, safe, year-round playing surfaces, able to withstand intensive use and all kinds of weather. The pitches are used for playing multiple sports including football, hockey and rugby and they are an important community resource that mean more people can benefit from the social and health benefits of physical activity.”*
- 2.3 *“However, concerns have been raised about the environmental impact of these pitches. Most commonly this relates to the fibre loss of microplastics and; in the case of third generation or 3G pitches, the presence of rubber infill, which is also a microplastic. We understand these concerns and are taking them very seriously.”*
- 2.4 *“We are aware of potential developments in the EU following the European Commission’s statement (released in September 2022) which recommended the introduction of a ban on the future sale of ‘intentionally added microplastics’ onto the European market, which includes rubber infill for 3G AGPs. The Commission proposed a six-year transition period before the new restriction becomes effective, although the timing for it to become law has not yet been made clear. Following the UK’s exit from the EU, the regulatory framework for these matters now sits at a UK level (except for Northern Ireland, which will continue to follow EU REACH requirements).”*

- 2.5 *“The Department for Environment, Food & Rural Affairs (DEFRA) commissioned an evidence project, under the UK REACH 2022/23 Work Programme, to review emissions of intentionally added microplastics. It will consider the risks they pose to human health and the environment and include a socio-economic assessment. The project will include rubber infill and will inform any future regulatory actions in the UK.”*
- 2.6 *“The Sports Councils – Sport England, Sport Wales, Sport Scotland, Sport NI – and leading sport bodies are working together and with respective governments to understand what the EU ban will mean for the stock of 3G AGPs in the UK and the timings for any legislative decisions.”*
- 2.7 *“If the EU law on a ban is passed*, it will be important to have a transition period because 3G AGPs are in widespread use by communities across Europe, were costly to put in place, and will be to remove. It is also important to note that there are currently no widely available alternative infill products on the market that are as effective, suitable for all weather conditions and deliver the required performance standards. That is why we are also committed to exploring alternative artificial pitch systems and more sustainable infill products. We will continue to work with partners across the UK and Europe to research and reduce the spread of microplastics into the environment.”*
- 2.8 *In September 2023 the European Commission completed the adoption of the EU REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals) restriction on the sale of intentionally added microplastics onto the European market, which includes rubber infill for 3G AGPsⁱⁱ.

3.0 ENVIRONMENTAL IMPACT

Microplastics

- 3.1 The 3G technology introduced the use of small rubber granules as a performance infill. In almost all cases this infill is made of microplastic, most commonly a synthetic rubber known as SBR or ‘rubber crumb’ that is made by grinding up old, ‘end-of-life’, tyres. Spread loosely across the plastic ‘grass’ filaments, they help provide comfort and reduce injury. However, the application of this loose microplastic, often outside, clearly creates the risk of microplastic pollution to the environment.
- 3.2 The rubber crumb used as infill in each artificial pitch consists of about 20,000 end-of-life tyres, ground into 120 tonnes of crumb and dust, with more used as support layers. The grass blades are made from virgin plastic equivalent to 1,400,000 plastic bags. Each 3G pitch weighs about 220 tonnesⁱⁱⁱ
- 3.3 **What are microplastics?** Microplastics are plastic pieces that measure less than five millimetres across. Microplastics are extremely persistent, which means it is almost impossible to remove them from the environment where they accumulate. Due to their persistence and the chemicals they are made

of, studies suggest they can be highly detrimental to the organisms they come in contact with, including by causing reduced feeding, poisoning and increasing mortality. They also tend to facilitate the transfer of contaminants along the foodchain, with potentially grave consequences for human health^{iv}

- 3.4 Michael Scheurer and Moritz Bigalke at the Geographical Institute of the University of Bern, conducted new research, which is published in the journal *Environmental Science and Technology*^v “These findings are alarming,” Scheurer said. They have found microplastics pretty much everywhere they have looked for them: on mountains, in the ocean, in the Arctic sea ice, and in our air, drinking water and bodies.
- 3.5 This issue, however, has only recently been recognised, meaning that in most cases this infill has very few barriers to prevent it leaking from the pitch. There is sufficient evidence to suggest quantities of loss are significant especially compared to other sources of microplastic pollution across the continent. Even more so when considering 3G turf’s increased popularity. (Nearly 100,000 pitches will have been installed across Europe by the end of 2020^{vi}.)
- 3.6 Without barriers, infill can be lost from the edge of the pitch during play, use and maintenance, spilt during installation and removal, or washed down drains. Once in the environment this infill, like all microplastics, doesn’t go away and can cause harm in soil, freshwater and marine environments. Once pitches reach the end of their lifespan, issues such as ‘dodgy’ recycling, aging material, and stockpiling of waste, all compound the problem, providing further routes of loss and additional impacts to the environment^{vii}.
- 3.7 Currently, SBR is the preferred infill material because it offers a variety of beneficial qualities including performance, durability and its recyclable. As SBR is defined as a microplastic, it is vital to minimise infill loss from the 3G Football Turf Pitch (3G FTP) and to prevent the transfer of this performance infill material to the environment by players or by maintenance equipment.
- 3.8 Several design details are introduced to minimise infill loss in accordance with The Football Association and FIFA recommendations, including:
- Football boot cleaning stations.
 - Detox units to all gated entrances (steel grates with drainage outlets and waste trays).
 - inspection chambers with waste collector to capture any materials entering the drainage system.
 - 0.25m high containment barriers installed around the 3G FTP fence enclosure (built into pitch barriers entirely surrounding the 3G football turf pitch surface).

- 3.9 To minimise the need for infill, a shock pad is fitted into the standard 3G pitch build. This pad reduces the amount of SBR infill as less rubber is required (sand/rubber ratio ensures the playing and performance characteristics meet the surface specification for FIFA Quality standard)
- 3.10 There have also been concerns raised about the use of old tyres in the rubber substrate being carcinogenic however a study^{viii} by the Journal of Exposure Science & Environmental Epidemiology concluded there were no health risks.

End of life disposal

- 3.11 A serious concern of artificial pitches is end of life disposal as typical lifespan of a pitch is 8-10 year. The Netherlands has been leading on this referring to the scale of the problem as a waste 'Turf Mountain'^{ix} Facilities do now exist to fully recycle waste artificial turf, such as one opened in Grangemouth, Scotland^x. This now means that now, at the point of disposal, the use of the shock pad, and the SBR infill can be considered environmentally sustainable, with the ability to be fully recycled at end of life. Therefore, disposal to land fill, or incineration can be avoided.

Flooding

- 3.12 With respect to drainage, there may be a concern for locations that are subject to flooding (4/5 proposed sites in Rochford District for new pitches have funding secured from the Football Foundation, see below). However all 3G pitches are based on a porous substrate, and when installed properly offer similar or better drainage than natural turf.

4.0 ALTERNATIVES TO MICROPLASTICS

- 4.1 Substituting infill material can also be a solution as performance infill doesn't have to be microplastic. With the European ban companies are innovating utilising waste streams from food production or creating new materials that are fully biodegradable^{xi} to replace microplastic. Several companies have turned to the waste of the 75 billion coconut husks produced every year, 85% of which is currently burnt or landfilled^{xii}, with olive pits, walnut shells, and wood also being used successfully. Moreover, cork infill has long been used as a suitable alternative, supporting a sustainable rural industry and biodiverse habitat.
- 4.2 Alternative options are there, but with only 3% of FIFA certified pitches in 2017 using organic alternatives, it is clear more needs to be done to increase the uptake. Though all infills have their advantages and disadvantages, the continuous supply of cheap rubber granules to the market may have limited the move toward more environmentally friendly options. An imminent restriction might well be the incentive needed to push these alternatives into the mainstream^{xiii}.

4.3 **What are other local authorities doing?** Worcester City Council produced a position paper in June 2023^{xiv} on the installation of a 3G Pitch at Perdiswell Leisure Centre that echoed the position statement in section 2.2 of this report.

4.4 Manchester City Council have taken the advice one step further. In March 2022 the council announced: The project will be funded via a mixed capital investment strategy in partnership with The Football Foundation to deliver Manchester's first Community Football Hub facility. The site will be the first Cork Infill 3G Facility brought forward in partnership with The Football Foundation nationally and will become a test bed for future investment into 3G facilities. As a natural product, granulated cork is a renewable raw material derived from the bark of cork oak from sustainably managed sources and commissioned the UK's^{xv}

The creation of more natural grass pitches

4.5 An alternative would be to create more natural grass pitches to meet the demand. As a rule of thumb, a 3G pitch can meet the demand of a least 10 natural grass football pitches. These 10 pitches would in reality also need to be floodlit to allow for the regular evening use that a 3G pitch offers.

4.6 At present, there are not any obvious sites that could accommodate and manage the booking of 10 extra football pitches. The extent of floodlighting that would be required across 10 pitches would also draw additional criticism from any neighbouring community.

5.0 COUNCIL POSITION STATEMENT

5.1 **Draft position statement:** *“Given the European Union ban on 3G artificial pitches on using traditional infill microplastics, and the declaration of a Climate & Ecological Emergency by this Council, the Council position is that any 3G pitches planned for the district should strive to use sustainable organic materials, and that end of life recycling of turf at approved facilities takes place”.*

6.0 OTHER OPTIONS CONSIDERED

6.1 The alternative is to proceed with the procurement and development of 3G pitches as outlined in the Football Association position statement in paragraph 2.2 to 2.7.

7.0 RELEVANT RISKS

7.1 There is a reputational risk that Environmental considerations are given too great a weight against the wider health and community benefits that sports participation can undeniably generate. Currently, this policy is being considered by the Climate Emergency Committee. It is advised that should the position statement be approved for presentation to the Executive for

further consideration, that representation from the Football Community is invited to present the wider benefits to the Executive.

8.0 ENGAGEMENT/CONSULTATION

The Need For a 3G Pitch

- 8.1 Rochford's team affiliation data has reached 300 affiliated teams for the 23/24 season (with more likely to affiliate across the season) and this figure has risen every season since 2016-17 where it was 230. The Essex FA are not expecting this growth to slow down with the female game increasing in popularity; more clubs developing disability football opportunities; and a lot of clubs reporting waiting lists in their younger age groups.
- 8.2 The FA and Essex County FA's ambition is that each of those 300 affiliated teams has access to a 3G pitch training slot every week and on that basis we use a 1:38 team demand model (i.e. 1 full size pitch can meet up to 38 teams training demand).
- 8.3 Based on these figures the Essex FA estimate that circa 8 full size 3G pitches are required to meet the current demand in Rochford, given that there is only one small sized 3G in the district at Clements Hall. Rochford is now the only Local Authority across Essex that has no full size 3G pitches and Essex FA view the district as having the most acute need to meet, based on the team numbers and current shortfalls.

9.0 FINANCIAL IMPLICATIONS

- 9.1 At present the Football Foundation are unable to endorse alternative playing surfaces, due to information relating to the long-term use, playability and maintenance of the alternative surfaces is not yet available. Therefore, to develop a 21-year business model (essential as part of the funding bid), where there is high degree of uncertainty relating to costs, the business plan is most likely to be rejected.
- 9.2 Therefore if the Council wished to explore alternative playing surfaces, the Football Foundation may not provide any funding for the 3G pitch. Further, there is a risk that an alternative playing-surface may not be deemed acceptable for FA affiliated matches

10.0 LEGAL/GOVERNANCE IMPLICATIONS

- 10.1 There aren't any legal implications relating to this report.

11.0 EQUALITY & HEALTH IMPLICATIONS

- 11.1 There are not considered to be any direct equality or health implications arising from this report.

12.0 ENVIRONMENT & CLIMATE IMPLICATIONS

- 8.1 This is covered within the body of the report.

13.0 ECONOMIC IMPLICATIONS

9.1 There are not considered to be direct economic implications arising from this report.

REPORT AUTHOR: **Name: Henry Muss**
 Title: Sustainability Manager
 Phone: 01702 546366
 Email: henry.muss@rochford.gov.uk

APPENDICES

None

BACKGROUND PAPERS

None

ⁱ <https://thegma.org.uk/news/updated-statement-3g-pitches>

ⁱⁱ <https://www.sportengland.org/how-we-can-help/facilities-and-planning/planning-for-sport/position-statement-on-3g-pitches#:~:text=In%20September%202023%20the%20European,rubber%20infill%20for%203G%20AGPs.>

ⁱⁱⁱ <https://www.pitchcare.com/news-media/3g-pitches-is-the-uk-sleepwalking-into-a-public-health-crisis.html>

^{iv} <https://www.clientearth.org/latest/news/microplastics-what-are-they-and-why-are-they-a-problem/>

^v <https://pubs.acs.org/doi/abs/10.1021/acs.est.7b06003>

^{vi} https://www.eauc.org.uk/3g_sports_pitches_so_long_to_rubber_crumb

^{vii} https://www.eauc.org.uk/3g_sports_pitches_so_long_to_rubber_crumb

^{viii} <https://www.nature.com/articles/s41370-018-0106-1>

^{ix} <https://www.youtube.com/watch?v=Y5o3J7uy4Tk>

^x <https://sportexgroup.co.uk/recycling/>.

^{xi} <https://www.fidra.org.uk/artificial-pitches/plastic-pitches/solutions/#infill>

^{xii} <https://www.cocopallet.com/why>

^{xiii} https://www.eauc.org.uk/3g_sports_pitches_so_long_to_rubber_crumb

^{xiv}

<https://committee.worcester.gov.uk/documents/b16258/Supplementary%20Report%20on%20the%20Potential%20Environmental%20Impact%20of%20the%20Proposed%20Installation%20of%20a%203G%20Arti.pdf?T=9>

^{xv} https://www.manchester.gov.uk/news/article/8986/plans_to_develop_hough_end_approved

APPENDIX 1 - Joint statement from Sport England, the Department for Culture, Media and Sport (DCMS), sportscotland, Sport Wales, the Grounds Management Association, Football Foundation, The Football Association, Cymru Football Foundation, Rugby Football League, Sports and Play Construction Association and England Rugby.

Artificial grass pitches (AGPs) provide a high-quality surface that are an integral part of modern community sport.

Recognised as durable, safe, year-round playing surfaces, they're able to withstand intensive use and all kinds of weather.

A properly maintained AGP can sustain up to 80 hours of use a week, providing an average of around 1,400 playing opportunities. This compares favourably to a good quality grass pitch, which can sustain just six hours a week, accommodating an average of around 100 playing opportunities.

This means many people are able to engage in sport and physical activity regardless of the weather when otherwise matches would be cancelled.

AGPs therefore enable more people to experience the benefits of being active, such as improved physical health and mental wellbeing and improved confidence.

They're used for playing many different sports, including football, hockey and rugby; and provide safe spaces for people to come together and connect, helping unite communities.

It's critical that our sports facilities are flexible and resilient to reflect the real everyday requirements of users and meet societal changes.

However, concerns have been raised about the environmental impact of these pitches.

These have mostly related to the fibre-loss of microplastics and, in the case of third generation (3G) pitches, the presence of rubber infill, which is also a microplastic.

We understand these concerns and are taking them very seriously.

In September 2023 the European Commission completed the adoption of the EU REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals) restriction on the sale of intentionally added microplastics onto the European market, which includes rubber infill for 3G AGPs.

The Commission has confirmed an eight-year transition period before the new restriction becomes effective and from October 2031, you'll no longer be able to purchase rubber crumb within the EU.

The ruling does not prevent the continued use of this material for AGPs, nor does it prevent the construction of new pitches with rubber crumb infill before 2031 – but it may make the maintenance of these pitches after this time difficult.

The transition period is important because it allows the 3G AGPs that are in widespread use by communities across Europe, to continue to be used and maintained until they reach their end-of-life.

Replacement surfaces are very expensive, and many communities would simply be unable to afford to do so before the end of the transition.

Following the UK's exit from the EU, the regulatory framework for these matters now sits at a UK level (except for Northern Ireland, which continues to follow EU REACH requirements).

The Department for Environment, Food & Rural Affairs (DEFRA) recently commissioned an evidence project to review emissions of intentionally added microplastics in the UK, including rubber infill.

The project is expected to report in spring 2025 and will inform any future regulatory actions in Great Britain.

The Sports Councils – Sport England, Sport Wales, sportscotland, Sport NI – and leading sport bodies continue to work together and with respective governments to understand what the EU ban will mean for the stock of 3G AGPs in the UK, and the timings for any legislative decisions.

As stakeholders, we're committed to exploring alternative artificial pitch systems and more sustainable infill products.

Examples of this include the Football Foundation's significant investment to create its own 'live test hub' to research alternative infill materials.

Many of the alternatives to rubber crumb are new to the market, and little is known about their performance, durability, availability, lifecycle cost and importantly the impact on player experience.

We are entering a period where there will be choices to make and it's important that data exists to help future AGP owners make the right choice for their pitch.

Until we have a clearer understanding of these alternatives, we believe that the adoption of containment measures is an important and responsible approach to prevent the migration of microplastics.

Studies from around Europe show good design can reduce infill loss by 98%.

Sport England is also undertaking research on the efficacy of containment measures and commit to making the findings of this research publicly available as soon as possible.

The Football Foundation has followed European Technical Guidance since 2020, installing containment measures on all its funded pitches.

We acknowledge the difficulty in trying to balance the health and well-being benefits that come from the use of 3G pitches with environmental sustainability factors.

However, it is also important to note that there are currently no widely available alternative infill products with proven durability on the market that are as effective, suitable for all UK weather conditions and deliver the required performance standards.

We'll continue to work with partners across the UK and Europe to research and reduce the spread of microplastics into the environment.