



Frequently asked questions on the use of rubber crumb in 3G artificial grass pitches

BACKGROUND

This document is the result of a collaboration between the key stakeholders listed below to bring together a series of frequently asked questions (FAQs) regarding the use of rubber crumb in “third generation” (3G) artificial grass pitches.

The FAQs are provided for general information only and are based on information, research and material that is currently in the public domain.

The guidance will be kept continually under review by all members of the group and the FAQs updated as necessary. However, the FAQs are not intended to be comprehensive guidance replacing the need for specialist technical advisors.

You should seek specialist advice from suitably qualified and experienced professionals in relation to concerns about specific sites or projects.

Care has been taken over the accuracy of the content of this note but the stakeholders cannot guarantee that the information is up to date or reflects all relevant legal requirements at the time of reading

Stakeholders: DCMS, Defra, Sport England, The Football Association (The FA), Rugby Football League, Rugby Football Union (RFU), England Hockey, the Football Foundation, Sports and Play Construction Association (SAPCA) and the Institute of Groundsmanship (IOG).

Updated July 2018

FREQUENTLY ASKED QUESTIONS

	Question	Response
1	What is a 3G pitch?	The term “3G” refers to third generation Artificial Grass Pitches (AGPs) that are specifically designed to meet the needs of football and rugby by more closely replicating the playing characteristics of natural turf than historic AGPs.
2	What are the different types of surfaces used on AGPs?	AGPs of differing characteristics are used for a range of sports such as hockey, football, rugby league and rugby union. The surfaces range from short pile, more suitable for hockey to long pile which are suitable for football and (where fitted with the correct shockpad) are also suitable for playing rugby union and rugby league.
3	How does a 3G playing surface differ from other artificial grass surfaces?	A 3G pitch has a longer pile length than other forms of artificial grass. (Typical range 40mm to 65mm). A 3G pitch usually has an infill material consisting of a mixture of sand and rubber crumb, rather than the sand or water used with other artificial grass pitches.
4	What is rubber crumb?	Rubber crumb is produced from used tyres, often referred to as end-of-life tyres (ELTs) that are processed and recycled into rubber crumb granules for use as infill.

¹ Artificial grass pitches (AGPs) are sometimes known as Synthetic Turf Pitches (STPs) or so called “Astro Turf” pitches. FIFA and The FA also use the term Football Turf Pitch (FTP)

5	Why is rubber crumb used in most 3G surfaces?	<p>The rubber crumb helps replicate the playing characteristics of natural grass by:</p> <ul style="list-style-type: none"> ● supporting the artificial grass fibres, helping to keep the fibres upright; ● providing a degree of shock absorption (for player comfort); and <p>allowing the boot studs to penetrate the surface and gain traction yet, like natural soil, also allowing the foot to slide.</p>
6	What standards and legal framework are in place for the performance aspects of AGPs?	<p>British Standard BS EN 15330-1: defines the following Health and Safety playing characteristics:</p> <ol style="list-style-type: none"> 1. Player – surface interactions (hardness, grip, etc.); 2. Ball – surface interactions (bounce height, roll distance, etc.); 3. Material quality and longevity; and 4. Build quality (e.g. levels, slope, etc....). <p>The major sports have their own specific standards such as FIFA Quality Programme or World Rugby Regulation 22. The health and safety issues these standards guard against are similar to the British Standard, the main differences are linked to higher level performance for each sport.</p>
7	What standards and legal framework regulate the chemical composition of AGPs?	<p>Chemical composition from a health and safety perspective is regulated through comprehensive EU legislation, spearheaded by REACH (the Registration, Evaluation, Authorisation and Restriction of Chemicals).</p> <p>REACH aims to ensure a high level of protection to human health and the environment REACH applies appropriate risk management measures to chemical substances. This is done by the four processes of REACH, namely the registration, evaluation, authorisation and restriction of chemicals.</p>

		<p>The European Chemicals Agency (ECHA) has primary responsibility for REACH. Within the UK, the Department for Environment, Food & Rural Affairs (Defra) leads on policy connected to REACH while the Health & Safety Executive (HSE) has day-to-day responsibility as the UK’s REACH Competent Authority.</p>
8	<p>How does REACH currently apply to rubber crumb and what does it say?</p>	<p>The main focus of REACH is on the individual chemicals that are produced and placed on the EU market rather than manufactured objects.</p> <p>Rubber crumb can contain a group of substances called polycyclic-aromatic hydrocarbons (PAHs), which are present in some of the ingredients used in the manufacture of rubber tyres. These are the substances that underlie the concerns that have been expressed.</p> <p>PAHs are controlled (restricted) under REACH in the following cases:</p> <ul style="list-style-type: none"> ● supply to the general public as substances or in mixtures; ● manufacture and placing on the market of tyres; and ● manufacture and placing on the market of consumer articles, with a particular emphasis on toys, childcare items and items that could be mouthed by children. <p>In each case the restriction is expressed as a “concentration limit” which must not be exceeded. The concentration limits, include safety factors” in order to minimise risk to the user.</p>
9	<p>What is the significance of the rubber crumb granules used in 3G pitches being defined as a mixture rather than a (consumer) article under the REACH regulations?</p>	<p>The European Commission decided that the rubber crumb used in 3G pitches is a chemical mixture rather than a consumer article.</p>

		<p>The concentration limit for PAHs in articles is a stricter requirement than the limit for substances and mixtures.</p> <p>ECHA has recommended that it will consider changes to the REACH Regulation to ensure that rubber granules are only supplied with very low concentrations of PAHs and other substances.</p>
10	<p>What work did the European Commission ask ECHA to carry out and why?</p>	<p>As a response to public concern regarding the safety of rubber crumb, the European Commission asked ECHA to consider whether there is any remaining health risk posed by the substances in recycled rubber granules used as infill on AGPs (including 3G pitches) and to determine whether any further restriction is needed.</p> <p>ECHA asked EU countries to provide any research or information that they had on the use of rubber crumb in 3G pitches, so that it could be taken into account in their assessment.</p> <p>ECHA published their report on 28 February 2017 and concluded that <i>“ECHA has found no reason to advise people against playing sports on synthetic turf containing recycled rubber granules as infill material”</i>.</p> <p>ECHA also advised that their evaluation was <i>“...consistent with the results of several other recent studies, such as the investigations of RIVM in the Netherlands and those of the State of Washington in the US.”</i></p>
11	<p>What are Sport England and other key national sports organisations doing to control the safety of pitches?</p>	<p>Sport England and key national sports organisations are committed to the highest level of safety and will, where appropriate, assist with implementation of the ECHA recommendations.</p> <p>Sport England, The FA, RFU, Rugby Football League, England Hockey and the Football Foundation adhere to the current standards set by the EU</p>

		<p>legislative framework and will adhere to any new standards resulting from the ECHA report.</p> <p>Sport England, The FA, RFU, Rugby Football League and the Football Foundation will require evidence that any AGP that they fund will be constructed in accordance with the requirements of all relevant laws on chemical composition and the performance requirements of the relevant governing body and European performance standards.</p>
12	<p>How will Sport England, The FA, RFU and the FF ensure that incorrectly sourced rubber crumb is not supplied to newly constructed pitches?</p>	<p>Sport England, The FA, RFU and the Football Foundation are all party to an AGP framework and through its administration will require evidence that the rubber crumb supplied and installed meets the REACH requirements.</p> <p>Non- funded organisations installing or maintaining pitches must be confident of their supply chain so as not to fall foul of the legal requirements regulated by Defra and HSE.</p> <p>Sport England, The FA, RFU, Rugby Football League and the Football Foundation are also working with trade associations such as SAPCA to develop ways to voluntarily apply higher standards for the rubber crumb supplied by the industry. This will provide further reassurance to pitch users and owners who use SAPCA accredited suppliers.</p>
13	<p>How do you know that the rubber crumb supplied from tyres manufactured after 2010 will meet the more stringent requirements?</p>	<p>The regulations for tyres came into force in 2010. Since then pitches have had to comply with specific concentration limits for PAHs. The Environment Agency is one of the bodies responsible for enforcing the regulations and its analysis and enforcement work shows a high level of compliance.</p>

14	What has happened since the ECHA report?	<p>The Government continues to work with the scientific experts in the HSE as well as ECHA and the European Commission to ensure that it remains at the forefront of research and is ready to implement the appropriate safety legislation in this country.</p> <p>Defra, HSE, DCMS, Sport England and the other key stakeholders are working together, where appropriate, to deliver the ECHA recommendations and are working with Public Health England to disseminate ECHA’s recommended guidance regarding basic hygiene measures to pitch owners and users. (see FAQ 21)</p>
15	Are AGPs constructed before 2010 or from pre- 2010 end-of-life tyres safe?	<p>The recent ECHA study found <i>“no reason to advise people against playing sports on synthetic turf containing recycled rubber granules as infill material”</i>.</p> <p>ECHA advised that their evaluation was <i>“...consistent with the results of several other recent studies, such as the investigations of RIVM in the Netherlands and those of the State of Washington in the US.”</i></p>
16	What about pitches not funded by Sport England, The FA, RFU and the Football Foundation? Will they be safe to play on?	<p>All organisations looking to build or maintain a 3G pitch must be confident of their supply chain in terms of compliance with the legislation. They should also be aware of any new regulations emanating from the ECHA study.</p>

		<p>The stakeholders have been working closely with the Sports and Play Construction Association (SAPCA), the UK trade body for the sports pitch industry.</p> <p>SAPCA has developed an industry wide infill testing protocol for manufacturers of artificial grass pitches and contractors installing pitches. The SAPCA protocol, launching in June 2018, aims to ensure that all performance infill materials (including rubber crumb) used on artificial grass pitches are provided from a supplier that regularly tests the materials at the point of source/production. This voluntary industry infill testing protocol will provide minimum requirements that go above and beyond what is currently required for rubber crumb under European regulation using a new standardised infill testing protocol. All SAPCA members will be expected to follow this protocol.</p> <p>Sport England and the sport governing bodies² all support this approach and will continue to work with the industry to provide greater reassurance that pitches in this country are suitable for use.</p>
17	Why is the situation in Holland different?	<p>We know there has been public concern in Holland about the safety of pitches after it was reported that a number of clubs had decided either to temporarily close their pitches or replace the rubber crumb with an alternative infill.</p> <p>However new research released in December 2016 from the Dutch National Institute for Public Health and the Environment indicates that the health risk of playing sports on 3G pitches is “virtually negligible”.</p> <p>ECHA backed this research after its EU-wide study published in February 2017 found no reason to advise people against playing sport on 3G pitches with rubber crumb. ECHA also advised that their evaluation was</p>

² The Football Association, Rugby Football Union, England Hockey, Rugby Football League

		<p>“...consistent with the results of several other recent studies, such as the investigations of Dutch National Institute for Public Health and the Environment in the Netherlands and those of the State of Washington in the US”.</p>
18	<p>Are 3G pitches safe to play on and maintain?</p>	<p>ECHA recently carried out an exhaustive EU-wide study and has found no reason to advise people against playing sport on 3G pitches with rubber crumb. This advice is based on ECHA’s evaluation that there is a very low level of concern from exposure to substances found in the granules.</p> <p>We are confident that 3G pitches in this country are suitable for use given that the concentration limits in the EU’s regulations are set to minimise any risk to the users. In addition, ECHA reported on the 28 February 2017 that it had “<i>..found no reason to advise against playing sports on synthetic turf containing recycled rubber granules as infill material</i>”.</p> <p>The regulations for tyres came into force in 2010. The Environment Agency is one of the bodies responsible for enforcing the regulations in this country and its analysis and enforcement work shows a high level of compliance.</p>
19	<p>What was the conclusion of the ECHA report on the possible health risks of recycled rubber granules used as infill in AGPs?</p>	<p>ECHA reported on the 28 February 2017 that it had “<i>...found no reason to advise against playing sports on synthetic turf containing recycled rubber granules as infill material</i>”.</p> <p>In addition, ECHA made several recommendations to ensure that any remaining concerns were eliminated.</p> <p>In response to the ECHA recommendations that <i>users of artificial pitches containing rubber granules should take the same basic hygiene measures that they would following any other sporting activity, such as washing their</i></p>

		<p><i>hands and any cuts incurred</i> the Stakeholders have been working with Public Health England and the Centre for Sports and Exercise Medicine to produce sports hygiene messaging information and are in the process of disseminating it through Sport England and stakeholder networks</p> <p>(see: www.groundsmanship.co.uk/sportshygiene)</p>
20	<p>What further research is being undertaken by ECHA and when will it conclude?</p>	<p>ECHA are currently conducting a fundamental review of the current standards as well as carrying out very detailed research. It is anticipated 'that the review should be completed later this year (2018) and any changes made mandatory by 2020</p> <p>Further details of ECHA's research is available at: https://echa.europa.eu/-/recycled-rubber-infill-causes-a-very-low-level-of-concern</p> <p>The stakeholders continue to monitor this research and will consider and act on recommendations.</p>
21	<p>How are DEFRA, PHE, Sport England, other national sports agencies and industry responding to the recommendations of the ECHA report?</p>	<p>The national stakeholders have undertaken a thorough review of the ECHA report and continue to work in partnership to address the report's recommendations. The Action Plan below provides a high-level summary of the work that is underway.</p>

ECHA³ Recommendations – Summary of Stakeholder Action Plan in England

	ECHA Recommendation	Action
1	Consider changes to the REACH Regulation to ensure that rubber granules are only supplied with very low concentrations of PAHs and other relevant hazardous substances	<p>ECHA are currently carrying out a fundamental review of the current standards as well as carrying out very detailed research. It is anticipated that the work will be concluded in 2020.</p> <p>Further details of ECHA’s research is available at: https://echa.europa.eu/-/recycled-rubber-infill-causes-a-very-low-level-of-concern</p> <p>Once any new research, guidance or regulations are published by ECHA and CEN the stakeholders will, if necessary, update their procurement, infill and pitch registration requirements etc.</p>
2	Owners and operators of existing (outdoor and indoor) fields should measure the concentrations of PAHs and other substances in the rubber granules used in their fields and make this information available to interested parties in an understandable manner.	<p>NGB Pitch registration: The FA, RFU and RFL are currently reviewing their pitch registration requirements to incorporate the proposed SAPCA infill testing protocol (see Action 3 below). This will provide reassurance to pitch users that the pitch infill complies with the minimum regulatory requirements</p> <p>Pitches not included within NGB pitch registration systems: For pitches not covered by the governing body pitch registration systems They will have to have their pitches independently tested. SAPCA members who have the right skills and accreditation will be able to offer to test the pitches against the new SAPCA protocol and the minimum legal requirements.</p>

³ ECHA: European Chemical Agency

3	Producers of rubber granules and their interest organisations should develop guidance to help all manufacturers and importers of (recycled) rubber infill test their material.	SAPCA have developed an infill testing protocol for manufacturers and importers of performance infill used on 3G pitches and this will be launched in July 2018.
4	European sports and football associations and clubs should work with the relevant producers to ensure that information related to the safety of rubber granules in synthetic turfs is: Communicated in a manner understandable to the players and the public.	The Stakeholders published a series of frequently asked questions which is available at: www.groundsmanship.co.uk/3gpitches To provide the necessary reassurance Stakeholders are proposing to use the NGB pitch registration processes and the SAPCA infill testing protocol to confirm that the rubber crumb used on any 3G meets a standard above the minimum required by legislation (as per Action 2 above)
5	Owners and operators of existing indoor fields with rubber granule infills should ensure adequate ventilation	Guidance on the ventilation of existing indoor facilities where rubber crumb is used in 3G pitches is currently under review by DCLG (Building Regulations)
6	In addition, ECHA recommends that: Players using the synthetic pitches should take basic hygiene measures after playing on artificial turf containing recycled rubber granules.	The stakeholders are keen to put appropriate measures in place in a balanced and measured way which reflects the very low level of risk. In response to the ECHA recommendations that <i>users of artificial pitches containing rubber granules should take the same basic hygiene measures that they would following any other sporting activity, such as washing their hands and any cuts incurred</i> the Stakeholders have been working with Public Health England and the Centre for Sports and Exercise Medicine to produce sports hygiene messaging information and are in the process of disseminating it through Sport England and stakeholder networks (see: www.groundsmanship.co.uk/sportshygiene)



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