CYMRU FOOTBALL FOUNDATION

ARTIFICIAL GRASS PITCH (3G) GUIDANCE

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ARTIFICIAL GRASS PITCHES (AGPS) OVERVIEW

Second and Third Generation (2G and 3G) Artificial Grass Pitches (AGPs) have been in use, by the team sports of football, rugby and hockey, for a number of years. The shorter pile, 2G carpets are suitable for competitive hockey, together with general multi-sport, non-contact training.

Without doubt, a large number of leisure and education institutions, together with clubs, have experienced the advantages of 2G and 3G AGP installations, providing the opportunity to play sport throughout the year and without interruption as a result of poor weather conditions.

However, because of the significant capital and revenue costs, viability, as well as sustainability challenges and their impact on other facilities, the provision of full sized AGPS must be viewed in the same way as other large, built, strategic sports facilities.

Financial planning is a significant consideration for all organisations who are thinking of making the enormous investment that artificial pitches demand. Any organisation considering such a development should already be multi-purpose, have a significant infrastructure, management capability, income generating capacity and funds in place to demonstrate financial viability and be serving a wide catchment area/significant population base.

The plans required to deliver a successful project are referred to throughout this guidance and in particular there is a section covering feasibility studies, market testing and other pre-project considerations on pages 5 to 8.

THE DIFFERENT TYPES OF SURFACE

Depending on the user requirements demanded by sports clubs, leisure providers or education institutions, there are a number of options when considering the type of pitch surface to select ranging from short pile to longer pile 3G carpets to even considering non-turf, polymeric surfaces for netball, tennis, basketball, for wheelchair users or general open access sites.

Second Generation (2G) artificial grass surfaces consist of two elements: synthetic turf and infill. They have a short pile carpet, infilled with sand and normally installed over a shockpad. The carpet is typically between 13mm-24mm in pile height. Generally, these surfaces are either sand-dressed or sand-filled.

Such facilities are the most popular choice to serve hockey needs and general sports training.

‘Gen 2’ is a new Second Generation ‘multi-sport’ surface developed by the FIH which is designed to provide sustainable facilities with a dynamic surface for multiple sports. These surfaces have been developed by hockey in collaboration with tennis and netball and are suitable for both full-sized hockey and with rebound boards, Hockey-5s, the official short form version of Hockey. The surface is also suitable for recreational tennis and netball.

Third Generation (3G) AGP installations differ in their development as the surface is generally supported by a sand and rubber infill. The infill is important to support the carpet pile,

recreate the performance qualities of real grass and reduce the risk of injury. These pitches are typically used for the playing of football as the longer pile and rubber infill attempts to replicate the ball roll and bounce, together with the traction properties of natural turf pitches.

Other natural infill materials instead of rubber are available in different artificial grass installations and may secure FIFA accreditation. However, rubber crumb infill is currently, still the most commonly used for reasons of cost, stability of infill and longevity. Cork for example is being used in a few cases as an alternative and more environmentally acceptable infill, particularly in hotter climates where temperature is a consideration. However, it is more expensive, needs more maintenance, the infill migrates more easily and performance deteriorates more quickly. Examples of other infills being developed include coconut husk mixes and blended walnut shells. This is a constantly evolving, specialist area of design development and guidance is always under review. **ANNEX A provides a summary of latest guidance on the 3G pitch infills.**

For football played under competition rules, the facility must also satisfy FIFA Quality certification (testing every 3 Years) or FIFA Quality Pro certification, with testing required annually.

3G pitches with additional design requirements needed to support specialist rugby i.e. with the associated head-level impact activities - involving tackling, scrummaging and lineouts will be more expensive to construct, maintain and replace. See **ANNEX B**.

AGP systems can be manufactured and installed to the meet the requirements of World Rugby, Rugby Football League (RFL) and International Football (FIFA). But if a pitch is certified by RFL/FIFA, this does not necessarily mean it meets World Rugby regulations.

AGPs used for competitive football at a senior level must be FIFA **certified, both in their in-situ characteristics (installation) and their manufacturing/factory standards.**

The FIFA quality assurance testing includes:

- How the player and surface interact;
- How the ball and surface interact - bounce and roll;
- How the surface reacts to all weather conditions;
- The length of pile – its vertical nature;
- The integrity of the surface and its life cycle;
- The overall constitution and manufacturing integrity;
- Evidence of the maintenance regime to be employed together with an on-site inspection of the equipment that has been recommended to undertake regular maintenance works;
- Monitoring and recording of maintenance activities.

FUTURE PITCH DESIGNS

Many people refer to the development of '4G' pitches. But do they exist?

4G pitches and synthetic turf

Currently there are 4G pitch options available, although these have not been recognised as competitive sport compliant by the National Governing Bodies.

These 4G options stem from the development of 2G and 3G technology and include a mixture of the two pile types. The pitch system is created using a short pile on the bottom, with a long pile sown through, removing the need for any infill material.

Such an artificial surface is more expensive and currently lacks the playing characteristics necessary to receive FIFA accreditation and licensing.

All contractors and manufacturers understand that AGP surfaces and systems must be approved by NGBs, including any new generation sports pitches.

ADVANTAGES AND DISADVANTAGES THAT RESULT FROM 3G PITCH INSTALLATIONS

Undoubtedly there are a number of benefits that arise from having 3G pitch facilities – making them a popular choice of AGP amongst clubs and education institutions.

Users can expect to experience:

- An all-year-round playing surface, in all weather conditions, although snow and frost can be an issue affecting use;
- Reduced maintenance costs when compared with high quality natural turf and hybrid pitches. **However, they are more expensive to maintain** when compared to basic, club standard, grass pitches;
- Environmental benefits include savings in respect of pitch irrigation;
- Set against these benefits are:
    - the high costs of installation;
    - having to spend up no less than £300k between Years 6-10 to replace the carpet of a full sized pitch and perhaps up to £100k in the 2nd replacement cycle to replace any shockpad;
    - additional maintenance obligations and costs (circa £11k per annum);
    - environmentally detrimental impacts, which include:
        - the potential for the pollution of water ways and drainage systems through the migration of rubber crumb and microplastics – spilling off the pitch, via footwear and clothes[1];
        - travel time – grass pitches tend to be 'closer to home' and within a reasonable walking and cycling distance, whereas 3G pitches tend to

demand no less than a 20minute drive time, with the associated negative carbon footprint implications;
- ongoing concerns with regard to the safety of infill materials;
- recycling challenges – the spent materials cannot be landfilled and have to be removed from site, deconstructed via expensive technology or transported and cleansed for re-use in other settings. Further guidance on the recycling of 3G AGPs can be found on page 10;

An update on 3G AGP design and development considerations is summarised in **ANNEX A.**

This guidance recommends that the development of 3G AGPs are generally only considered as a shared club hub facility, for example on an education site, where a number of clubs can share a quality facility, where maximum use can be made of the pitch in the day time, as well as evenings and where the riparian responsibility for maintenance and replacement falls to the Local Authority.

However, even the shared club hub development can only be considered a good approach if it is supported by the necessary feasibility and business planning process - the early preparation of pre-construction plans and establishment of the hub management group, along with access protocols to benefit all hub catchment clubs.

Current evidence in Wales, shows that it is unlikely that single voluntary sector organisations i.e. individual clubs, will be in a position to establish the necessary cash balances to cover the necessary lifecycle costs and thereby secure the sustainability of the facility through the funding of the replacement carpet between Years 6-10.

Therefore, the full potential of artificial surfaces, for most organisations, will only be realised on shared sites and developed through a local authority, education and club partnership.

FAW is preparing facilities plans in partnership with all LAs, and this approach will identify strategic priority areas for the development of future full-sized AGPS.

THE REQUIREMENTS FOR A DETAILED FEASIBILITY STUDY

It is becoming increasingly apparent that early AGP projects have accumulated insufficient sinking funds to replace the surface when needed. Therefore, it is essential to evidence that the facility will generate enough money to cover the running costs and a sinking fund to replace the facility in 8-10 years' time. A recent Football Foundation review of AGP operators in England has identified significant shortfalls in replacement carpet sinking funds i.e. shortfalls in the set aside funds of 41%.

Full business and development plans for new full sized AGPs are therefore required to evidence that they are sustainable. The feasibility process must also include a public consultation and gap analysis and demonstrate that the new facility will not negatively impact on the sustainability of an existing facility within proximity (i.e. displace users and revenue).

The importance of feasibility studies cannot be overstated. It is vitally important to get the design of facilities right. With regards to AGPS, because of the significant capital and revenue costs we recommend the early preparation of a detailed investigation and options appraisal informing a feasibility study. This is essential to inform a grant application and to safeguard the long-term sustainability of the facility. We have to be satisfied of enough planned use and income to establish the necessary cash balances to cover the annual maintenance and refurbishment costs and the required set aside fund of c£30k pa, for a replacement carpet every 10 years.

Feasibility studies should include:

- **Local market testing** involving the assessment of:
    - size of catchment population within 20 minutes travel time;
    - other facilities and options appraisals;
    - evidence of sports demand via valid surveys;
    - confirmation of no other full sized AGPs within a 20-minute travel time;
    - the impact of any new facility on the use of existing pitches, avoiding user displacement affecting the sustainability of other facilities. Key points to be investigated include:
        - the current occupancy levels of existing facilities and waiting lists;
        - the comparable prices charged per hour for seniors and juniors;
        - annual income from the main user group which is usually football
        - any existing income generated from your own customer base that would be displaced
    - identification of different sports performance needs, informing the design brief and best choice of surface/system as well as user requirements informing usage and management plans;
    - adjacent schools will also have an important stake and say in the choice of future surface to best serve student needs. However, the choice of surface should also be informed by the number and size of clubs in the surrounding area;

- In terms of demand for hockey, rugby and football we refer to the latest Sport Wales School Sport Survey (2022) and a summary of the key figures are shown in the table below.

Sport Wales Latest School Sport Survey (2022)	Boys % of school aged Young People Yr 3-11	Girls % of school aged Young People Yr 3-11
Any participation Football	77	53
Any participation Hockey	11	14
Any participation Rugby	49	25
Community club participation Football	33	14
Community club participation Hockey	2	3
Community club participation Rugby	19	6
Extra-Curricular participation Football	26	15
Extra-Curricular participation Hockey	4	6
Extra-Curricular participation Rugby	17	9
Latent Demand Football	55	31
Latent Demand Hockey	9	12
Latent Demand Rugby	29	14

The feasibility study should also inform:

- the management/operational plan to include staffing arrangements, marketing and usage plans, to show how the new facility will generate more activity and by whom, with an accessible pricing policy;
- business planning addressing:
  - detailed income and expenditure forecasts;
  - management and maintenance;
  - outline cost plan;
- an assessment of pricing, including a sensitivity and affordability analysis and income set to secure sustainability. Sensitivity analysis to take account of the Local Authority already charging a subsidised rate for public use of their 3Gs and in some cases free use of grass pitches; the preparedness of clubs to pay the 'going rate' to cover lifecycle costs i.e. up to £120 per hour is unlikely to be an easy option for most potential customers See **ANNEX C** for guidance on 3G prices;
- analysis of the organisation's capability through a strength and weaknesses assessment. 3G facilities must **generate net profits of no less than £30k pa to secure sustainability**. The organisation contemplating such a facility must be well established and financially robust, with a healthy current turnover/generating annual surpluses; strong paying membership and a number of working partnerships;

Specialist ground condition surveys and technical feasibility studies should include:

- environmental investigations and feasibility to include ground soak-away capacity testing, water discharge, flood risk assessments, surveys examining the impact on the ecology, and flora, particularly location of trees and avoiding impact on root zones as well as assessments in respect of how floodlights may have an adverse effect on bat movement;
- historic land use i.e. former mining and landfill checks impacting surface stability; discharges; as well as archaeological interests etc.;
- the topography of the area, ground stability, levels, soil profile and condition etc.;
- overhead and underground services;
- best options for pitch orientation;

Feasibility surveys should also assess the pros and cons of the location i.e.:

- check covenants and restrictions on the location i.e. the feasibility of introducing ball catch fencing around the pitch perimeter;
- make sure there is good highways access for a large growth in business footfalls
- avoid an area with overhanging trees to prevent leaf drop
- is it suitable for floodlighting and fencing – not close to housing
- the 3G should be located close to changing rooms, with engineered pathways to enable access without walking over grass, that would lead to grass cuttings and mud migration contaminating the pitch;

Finally, statutory approvals will need to be sought i.e:

- planning consent requirements, with considerations to include access, suitability of local highways, parking, noise and the general impact of floodlighting on the local environment and neighbours;
- all construction work in Wales with drainage implications, of 100m² or more i.e. 3G pitches, is required to have Sustainable Drainage Systems (SuDS) to manage on-site surface water (whether they require planning permission or not) Anything that covers land is classed as a structure for the purposes of the SuDs Approving Body (the SAB) approval.

A full feasibility investigation into all of the above will help inform the preparation of detailed designs informing the choice of pitch design, construction and method/management of procurement and Health and Safety provision.

FACILITY COSTS AND DEVELOPMENT IMPLICATIONS

The following costs are set out in respect of the development of Artificial Grass Pitches (AGPs) at the 3rd Quarter 2024.

Indicative Capital Costs for the Development of AGPs

Training areas with 40mm-50mm pile 3G pitch; fenced; sports lighting – overall dimensions 61mx43m, playing area 55mx40m. Indicative capital costs £500,000 (exclusive of VAT).

Full sized 40mm pile 3G pitch, fenced, with sports lighting – overall dimensions 106mx70m with a playing area of 100mx64m with 3m run-offs to all sides up to the first obstruction.
Indicative capital cost up to £1,150,000 (exclusive of VAT).

Design considerations to reduce the facility capital costs will include:

- Removal of macadam layer and the introduction of an appropriate shockpad;
- The use of existing floodlighting system;
- No perimeter fencing.

In all cases the AGP must have a minimum 3m wide run-off to all first obstructions and must adhere to the following design principles to minimise the migration of infill into the community:

- Fitting containment barriers on a pitch's perimeter fencing made from recycled rubber;
- Installing decontamination grates and boot cleaning brushes at all player and vehicle entrance gates;
- Ensuring all stormwater drains around a pitch have suitable microfilters to capture any infill being carried by surface run-off, etc;
- Keeping a dedicated maintenance brush within the boundaries of the pitch, so it cannot carry infill into the surrounding environment;

More information on Risk Mitigation Measures can be found here

Procurement

The development of 3G pitches should only be procured to organisations who are members of the Sports and Play Construction Association (SAPCA). This will be a condition of any AGP funded via the Cymru Football Foundation. As a condition of membership, SAPCA requires companies to comply with its Codes of Practice and Protocols. This means whenever you employ a SAPCA member to design, build, or maintain your pitch, only an infill that is been registered on the SAPCA Infill Protocol will be specified/used and good design principles identified above will be implemented.

Where possible, all 3G AGPs funded via the Cymru Football Foundation will utilise the Football Foundation's AGP framework to ensure consistent procurement, design and delivery standards.

Tender Cost Inflation

Tender prices increased by 2.1% in the year to 4Q24. Price inflation is expected to continue throughout 2025/26 with tender prices forecast to rise by approximately 4% in 2025 and 3.5% in 2026 with variation due to procurement and project type, and regional factors.

Future Developments

In light of the proposed phasing out of rubber infill, the CFF has decided that all new AGP projects shall incorporate a shock-pad to help future proof pitches and reduce rubber crumb infill. This will necessitate an additional cost of £80-100K per pitch however will reduce the costs of transitioning to an alternative infill material on pitch renewal.

Going forward, CFF will also consider:

- encouraging the use of alternative organic infills
- when it will no longer fund AGPs with Micro-plastics – based on advice from the UK Stakeholder Group and any UK legislative directives

LIFECYCLE AND ANNUAL MAINTENANCE COSTS

The current costs of replacing a 3G carpet or sand filled/short pile AGP with a 3G AGP (assuming the underlying shockpad is in a fit state for re-use) is c£400,000 (exclusive of VAT) excluding recycling costs. It should be noted that where previously the repurposing of end-of-life carpet was encouraged, this is no longer the case. All materials must be disposed of legally and satisfy environmental legislation linked to sustainability and waste management. Detailed guidance on processing end of life turf can be found here

Sustainable business plans

The following guidance has been prepared to assist organisations with their development of business plans for future developments. What follows are indicative costs associated with long-term maintenance and the replacement of major components over the life of the facility.

Typical annual allowances are expressed as percentages of the overall estimated total project costs based on a 25-year cost model. Noting however, that for FIFA Quality Certified facilities, carpet replacements may be required between years 6 and 9, depending on intensity and type of use, correct use of footwear, appropriate maintenance – regular brushing and renovation works in accordance with the manufacturer and contractor's post completion instructions and conditions of warranty.

Training areas with 40mm-50mm pile 3G pitch; fenced; sports lighting – overall dimensions 61mx43m - sinking fund 2.8% pa maintenance 0.4% pa.

Full sized 40mm pile 3G pitch, fenced, with sports lighting – overall dimensions 106mx70m with – sinking fund 2.9% pa maintenance 0.5% pa.

The annual sinking fund and maintenance costs for a full-sized pitch are therefore c£30,000 pa sinking fund and no less than £5,000 pa maintenance.

A summary analysis of the base operational costs for 3G pitches (excluding management, marketing and staff costs) are summarised below[2]:

Floodlighting		**Per Annum**
	Utilities (floodlights)	£6,273
	Lamp replacement	£600
	Maintenance	£500
Repair & Maintenance		
	Annual maintenance contract	£4,500
	Regular maintenance	£3,800
	Rubber crumb top up	£2,000
	Pitch testing	£433
	Equipment replacement	£2,000

[2] DCMS Grassroots Needs Assessment June 2022. 4Global.

Sinking Fund		
	Carpet replacement	£30,000
Total		**£50,106**

Maintenance Requirements

Regular maintenance will be required - a ratio of 1 hour's maintenance to 8-10 hours' use, together with quarterly inspections and maintenance by an approved company to reduce the compaction of the infill material ensuring consistent ball bounce, will be a certification requirement.

For informal community use, litter bins will be required and attention should be given to the route from any changing rooms to the 3G pitch – grass and soil will quickly migrate to contaminate the infill material.

Leaves, moss and weeds must be removed from around the edges of the pitch where the mechanical brushes find it difficult to work.

Rejuvenation will be required at some point in the lifetime of the carpet, to maintain the integrity of the pitch and in particular its porosity – this work could cost up to £35,000 plus vat.

Maintenance logs must be kept to avoid any future disputes and these should include an analysis of usage over the same period.

Definitions

Sinking Fund - major replacement costs, typically to include replacement of the carpet shockpad, fencing and floodlighting, redecoration of fencing and relining of the pitch.

Maintenance – day to day repairs and planned maintenance, to include the application of herbicide sprays and moss killers, infill top-up/redress where required, drag brushing to comply with manufacturers guidance.

For a FIFA Quality pitch, an inspection report and certification is required every 3 years.

Exclusions

All operating costs and end of life costs together with the management and marketing of the facility have been excluded. These costs will include cleaning, utilities, loan repayments, taxes and other overhead costs.

Occupation costs may also include security, telephones, furniture, fixtures and fittings.

End of life costs will include disposals, demolition and reinstatement to satisfy any contractual requirements – returning the facility to a natural turf pitch.

ANNEX A: UPDATED POSITION STATEMENT ON 3G PITCHES (DECEMBER 2023)

Joint statement from Sport England, the Department for Culture, Media and Sport (DCMS), Sport Scotland, Sport Wales, the Grounds Management Association, Football Foundation, The Football Association, Cymru Football Foundation, Welsh Rugby Union, 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 microplastics in the form of rubber infill getting into the ecosystem and the need for greater focus on the end-of-life recycling of pitches. 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, in the community sport landscape we're committed to exploring alternative artificial pitch systems, more sustainable infill products and increasing recycling capacity available to sports providers nationwide.

This commitment is reinforced through Sport England's Sustainability Strategy 'Every Move'. Sport England will work with partners and stakeholders, including the Football Foundation, to explore viable alternatives to the rubber infill used in third generation 3G AGPs and improved recycling opportunities and processes, given concerns about plastic pollution and waste.

Examples of this include the Football Foundation's significant investment in its own '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.

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

We know from studies around Europe that good design can reduce infill loss by 98%.

In partnership with the Football Foundation, Sport England is also undertaking research on the efficacy of containment measures and we're commited to making the research available as soon as possible.

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.

More information will be published as discussions progress

The Cymru Football Foundation follows European Technical Guidance, 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 will continue to work with partners across the UK and Europe to research and reduce the spread of microplastics into the environment. More information will be published as discussions progress.

Click here to download FAQs

ANNEX B: INDICATIVE GUIDANCE ON WORLD RUGBY 3G STANDARDS

Artificial Rugby Turf is the term used by World Rugby to describe artificial surfaces used in the game of Rugby Union. The cross section of the facilities construction is described as follows:

- Artificial Rugby Turf Pile;
- Performance infill (rubber);
- Stabilising infill (sand);
- Primary and secondary backing;
- Shockpad;
- Porous macadam layer;
- Constructed over stone base with appropriate drainage system below.

A 3G pitch can only be suitable for contact Rugby Union matches or training where the pitch has an up-to-date test certificate that demonstrates compliance with World Rugby Regulation 22. This test must be carried out by an accredited World Rugby test institute.

World Rugby Regulation 22 relates to the performance standard of the pitch and measures criteria such as head impact, skin friction, joint strengths and energy restitution. These tests reflect the characteristics of a good quality natural turf rugby pitch. The facility must past Regulation 22 on completion and the certificate must be renewed every 2 years.

AGP systems can be manufactured and installed to the meet the requirements of World Rugby, Rugby Football League (RFL) and International Football (FIFA). **But if a pitch is certified by RFL/FIFA, this does not necessarily mean it meets World Rugby regulations.**

ANNEX C: A GUIDE TO CURRENT 3G PRICES

Income generated needs to cover the cost of any staffing and management plus maintenance at over £50k pa (allowing for cost of replacement carpets @ £400k every c10 years)

3G pitch hire charges range depending on the use and provider and their capacity to subsidise ie:

- From full sized pitch to half size to 1/3 size
- From members to non-members
- From Seniors to Juniors
- Plus, different for match rates
- Plus, some don't advertise and do negotiated rates

Those that are cheaper – are generally Local Authority subsidised membership rates and/or those not setting aside a sinking fund or paying enough for maintenance and rejuvenation. Or maybe the pitch is just poor quality or not a venue of choice.

There are many reasons for variables, but as a guide - here is a sample of full-sized pitch prices per hour (Only the Full-Sized pitch price is provided to give a simple benchmark):

- **LA subsidised rates** £55-£65 e.g.**:**
  - Seniors £75 – £100 members/non members
  - Juniors £45-£60 members/non members
- **Club operator rates**
  - £65 -£75 seniors
  - £52 juniors
- **Independent or commercial operator rates**
  - £115- £125 seniors