



European Synthetic
Turf Organisation

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QUARTERLY

YOUR GUIDE TO ALL THE DEVELOPMENTS IN SYNTHETIC TURF

HUNGARIAN FOOTBALL
FEDERATION COUNTS
ON SYNTHETIC TURF TO
DEVELOP FOOTBALL

SYNTHETIC TURF A MAJOR
CONTRIBUTOR TO THE
SUCCESS OF FOOTBALL IN
ICELAND AND EURO 2016

PLUS...

Vast synthetic turf use in football's best academy

Synthetic turf revolution in French professional football

...and much more



VAST SYNTHETIC TURF USE IN FOOTBALL'S BEST ACADEMY

Known as the best youth academy in world football, FC Barcelona's infrastructures supporting what is called "la Masia" stands up to the high standards of this true factory of champions.

The academy is based in the Ciutat Esportiva Joan Gamper, in the outskirts of Barcelona, which also comprises the training ground of the professional team. "La Masia" holds a great part in FC Barcelona's recent series of huge successes and bases itself firstly on a winning philosophy of football that belongs to the club's genes and is taught throughout the academy. But it is also based on vast and modern training and development facilities, which are one of the primary tool to achieve greatness on the field.

Indeed, the Ciutat Esportiva Joan Gamper's infrastructures comprises for example 9 football pitches, 4 of which are synthetic turf ones. To contribute to possess the greatest means supporting its unique player development skills, the club achieved the installation

of these 4 synthetic turf pitches in 2012 which are the most cutting-edge surfaces of that type, leaders in FIFA Recommended artificial turf installations. The pitches have been designed to meet and exceed the FIFA 2-Star quality mark.

Emili Sabadell, FC Barcelona's Director of Operations, was quoted as saying that "this is very beneficial to FC Barcelona, as we will replace the current artificial turf, which was installed ten years ago, with new turf of a quality that is appropriate for our youth football". The product features one of the most durable fibers in the industry surrounded by a patented mixture of silica sand and cryogenic rubber infill material. This turf system has been designed to offer maximum safety, playability, and durability, as well as enhanced surface permeability.

These synthetic turf pitches are set to deliver optimum vertical ball rebound, ball roll, shock absorption, deformation, and rotational resistance. These biomechanical performance criteria are key to ensuring a high performance football surface for elite level competition, that of FC Barcelona.



HUNGARIAN FOOTBALL FEDERATION COUNTS ON SYNTHETIC TURF TO DEVELOP FOOTBALL

Back in 2011, the Hungarian Football Federation enacted a new strategy in order to improve the supply of football facilities and to grow the numbers of people playing football, contributing to developing the sport in the country.

This strategy took the form of a 10-year plan, known as the "National Pitch-building Programme", where several hundreds of football pitches, mostly synthetic grass ones, would be built around the country to promote further the game of football.

To this date, around 300 hundred pitches have already been delivered, with the project having started in 2014. This goes to show the large scale of the project with a particular attention to synthetic grass as the right tool to support growth of football players in Hungary. The MLSZ (Hungarian Football Federation) selects the locations of pitches to be built via a tender process where municipalities, clubs and schools can participate. The different entities which

are awarded a pitch then receive financial support from the Federation to 70% of the total cost of building their pitch.

A tender process was also established to select the company that would supply some hundreds of thousands of square metres of synthetic turf required to support the project. Indeed, the quality and longevity aspects of synthetic turf are important to have a successful implementation of this national programme. This type of surface is very suitable to countries such as Hungary which experience cold winter conditions, where preparing and maintaining natural turf can be particularly challenging. January is the coldest month in the capital city Budapest, with fairly frequent snowfall and average temperatures around -4°C. After cold winter months, frost can leave natural surfaces uneven, prompting heavy maintenance and re-leveling. Synthetic turf playing fields remain uniform and consistent, without worry of weather damage.

CRUYFF FOUNDATION TURNS TO TIGERTURF FOR NEW COMMUNITY SPORTS FACILITIES



TIGERTURF™

The Johan Cruyff Foundation has partnered with leading artificial turf manufacturer, TigerTurf, to install up to six children's community sports pitches throughout the UK.

Thanks to funding from the People's Postcode Lottery, the charitable organisation founded by Dutch football legend, Johan Cruyff, to give children the opportunity to play and be active, is expected to deliver outdoor playing areas manufactured by TigerTurf to schools and community areas around the country. Each 'Cruyff Court' is designed with the aim of encouraging children to get active and learn vital social skills such as respect, responsibility and integration through sports.

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Introduced in 1997, the Foundation's 'Cruyff Court' concept is a community leisure area measuring 42m x 28m and made using artificial turf. Every one of the new courts installed during its three-year partnership with TigerTurf will boast the optimum combination of durability, high-performance and safety for users of all ages.

Initially, the agreement is set to bring Cruyff Courts to six local areas; some of which in partnership with professional football clubs as part of their community outreach programmes.

Niels Meijer, Director of the Cruyff Foundation, commented: "The partnership with TigerTurf UK allows us to expand our activities in the UK. Being active at a young age is of severe importance for the development of a child. With the establishment of at least six Cruyff Courts, we are pleased that TigerTurf partners with us to provide state-of-the-art sport facilities in the UK so that more children can be active."

Paul Langford, Managing Director at TigerTurf UK, added: "The Cruyff Foundation does a truly excellent job in encouraging children to stay active and healthy while learning vital social skills through sport. We're honoured to have been approached to play our part in bringing some interactive spaces to schools and communities around the country."

For more information on TigerTurf UK and its industry leading portfolio of synthetic turf, visit www.tigerturf.com





SYNTHETIC TURF REVOLUTION IN FRENCH PROFESSIONAL FOOTBALL

Synthetic turf is a playing surface that has entered French professional football for a few seasons now. The trend started with clubs FC Lorient and AS Nancy Lorraine each installing a synthetic turf pitch in their stadiums for the 2010-2011 season. A third professional club, La Berrichonne de Châteauroux, continued the trend later on.

This French 2nd division football team, based in the town of Châteauroux in central France was founded in 1883 as a multi-sports club, plays its home games at the Stade Gaston-Petit, that can hold up to 17000 spectators. The club decided to install a synthetic turf pitch for the start of the 2011-2012 season instead of the natural grass pitch in its home stadium which belongs to the city of Châteauroux. The club is now playing its fourth season on the same surface that has therefore brought satisfaction to the user.

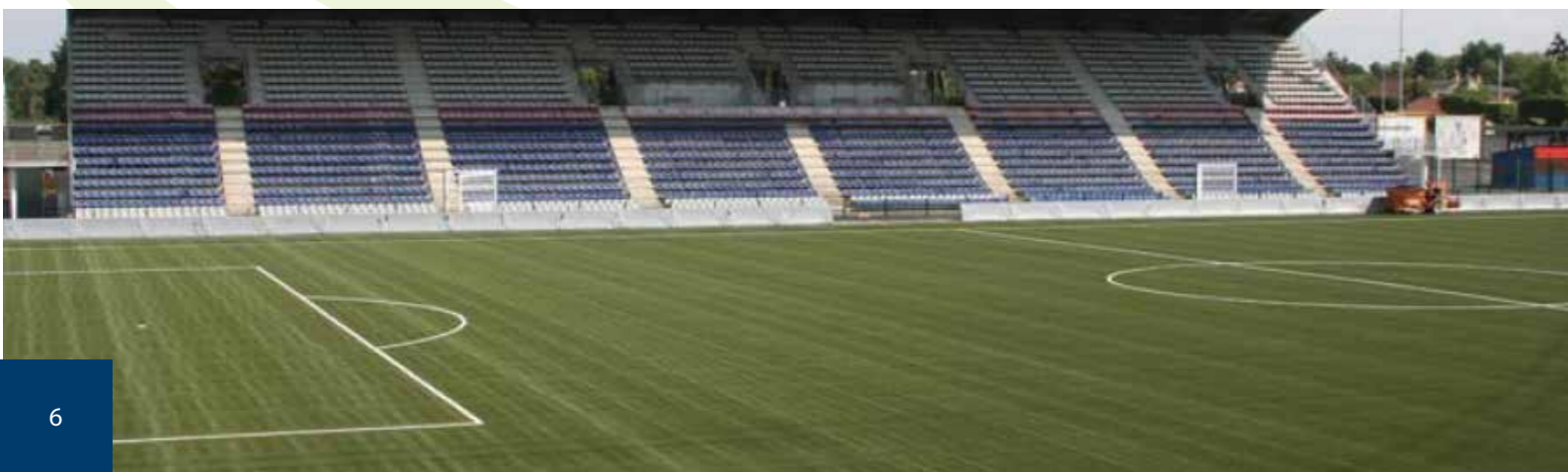
Indeed, this new surface, certified FIFA 2 star ranking, has brought quite some advantages to the club. Such improvements include a pitch now usable the whole year with drastically reduced risks of postponements of games due to weather conditions, near non-existent maintenance expenses and considerable energy savings notably because there is no longer any need to heat up the pitch in winter. The durability of the surface is very interesting too, **“the pitch is guaranteed to last at least five years”** says club vice-president Daniel Baujean. “But we know that the life expectancy of the current field with this quality, is much longer. We do not think at all about its change.

SYNTHETIC TURF A MAJOR CONTRIBUTOR TO THE SUCCESS OF FOOTBALL IN ICELAND AND EURO 2016

Having achieved a wonderful Euro 2016 tournament for their first participation, reaching the quarter finals, Iceland have confirmed its huge progression in its football from the past few years.

Iceland's extensive and rather recent use of synthetic turf is arguably a major factor in the overall improvement of football standards in the country. This article explains the link between synthetic turf and the success of football in Iceland.

www.telegraph.co.uk/football/2016/06/03/euro-2016-the-story-of-icelands-unlikely-footballing-revolution



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www.jutagrass.com

TURF TIPS: CHOOSE THE RIGHT SERVICE PROVIDER

RE-MATCH

Recycling of both carpet and infill – almost 100% material recovery is possible – if you choose the right service provider.

A number of domestic and foreign market players offer services with relation to disposal of artificial turf pitches. Unfortunately, these players may not all have access to the recycling technology, which they market. Various media reports highlight cases where used turf pitches are discarded in the middle of a forest or are incinerated – even if the pitch-owner thought he had paid for a sustainable recycling process. To avoid being charged with environmental crimes, pitch-owners should consider making a few checks prior to signing the order for waste disposal.

- Ask the company to provide a certificate from the national authorities confirming that the company specifically is cleared to transport and handle artificial turf pitches, which in most countries are classified as not-listed waste and thus requiring special expertise.
- Ask the company for a copy of the latest Annual Accounts just to verify that you are dealing with a waste processing company in existence. Lately, companies, which are registered as recycling factories, have approached pitch owners – however, they only buy enough electricity to run office equipment.

- Ask for a detailed, written description of the recycling method used by the company. Especially you want to check the recycling level and you want to know how the company will dispose of residual waste materials. Please be aware that some recycling companies have obtained an ETV certification, which will confirm their approach and process.
- Even if removal of your old, used pitch may be part of a total contract for a new artificial turf system, then you are recommended to make the above checks. If you have second thoughts about the answers, then you are recommended to split the contract providing you the opportunity to enter into a disposal contract with another service provider. Usually disposal contracts for artificial turf systems cost less than DKK 500.000, which is the cut off for tenders. You may therefore enter into a separate waste disposal contract directly with your preferred recycling company.
- In your search process for a sustainable recycling company, you may want to pay special attention to market players, which have recently invested in state-of-the-art recycling facilities. Today you have the option to enter into an agreement with a service provider, which can see to it that the material fractions from your old turf pitch system is recycled by almost 100% - and the correlating CO2 emission is only 5% of the emission which will be released if you choose to send your used turf pitch for incineration.



TIGERTURF BLOG RECEIVES RIBA CPD APPROVAL

TIGERTURF™

The Royal Institute of British Architects (RIBA) has granted CPD approval to a blog by leading artificial grass manufacturer, TigerTurf UK.

Thanks to its RIBA approved status, a range of posts on the TigerTurf blog, which aims to enhance readers' understanding of how artificial grass can be specified for different sport and landscape-based applications, can now count towards the annual CPD requirement for architects and other construction professionals.

As well as offering regular sport-specific guides to the specification process and guidance on the design and construction of artificial grass spaces, the blog also offers insight into its uses, maintenance, and how sports clubs can increase their chances of submitting a successful funding application.

Architects eager to benefit from regular insight from the world of artificial grass can even sign up to a tailored newsletter, which highlights articles specifically geared towards the interests of RIBA members.

Those wishing to enhance their knowledge of artificial grass further can also take advantage of a RIBA-approved CPD seminar offered by TigerTurf, which explains what it means to specify synthetic grass for a 3G football or rugby project.

Upon request, the one-hour session can be delivered at registered practitioners' offices free of charge, and covers a plethora of topics ranging from what a 3G pitch is and the sports' governing bodies testing and accreditation processes, to installation, maintenance, and environmental considerations.

Paul Langford, managing director at TigerTurf UK said: "Our blog reflects our belief that, as a manufacturer, we have a responsibility to offer information and advice as well as our range of products. Architects know only too well how important the specification process is to any construction project, and the content posted on our blog is there to help those considering the use of artificial grass."

Joni Tyler, Head of CPD at the RIBA added: "There can never be a 'cookie cutter' approach to professional development, and TigerTurf's blog is the perfect example of how a manufacturer has delivered useful content in a format architects can turn to in order to learn about a chosen topic."

To visit the TigerTurf blog, visit: tigerturf.com/uk/media/blog

To book a CPD seminar session, email: UKmarketing@tigerturf.com

Or call: 01299 253966.



TECHNICAL SURFACES' REGENERATION® RESTORES ST. GEORGE'S PARK PITCH



TECHNICAL SURFACES

Technical Surfaces has completed a large-scale renovation of the 'David Beckham' community pitch at St. George's Park, and in the process has enabled the surface to qualify for The FA's 3G Football Turf Pitch Register.

The pitch, one of only two outdoor artificial surfaces on site, is now around 14 years old and plays host to a wide variety of matches and training sessions.

Technical Surfaces were originally contacted by St. George's Park's Head Groundsman, Alan Ferguson, to advise the best course of action to remedy the problems occurring on the surface. The pitch was being maintained regularly by site staff, and although it suffered no issues with drainage, the rubber crumb had become heavily contaminated throughout,

clogged with soil pollutants, dust and fibre fragments. Rubber levels were also very inconsistent across the surface, and infill was beginning to break down, trapping and flattening the turf fibres. This compacted and contaminated rubber infill created a playing surface that was hard underfoot, with rubber dust particles leaving unsightly black marks on players and footballs.

The centre's first thought was to replace the surface. However, following discussions with Technical Surfaces, they opted instead for our patented Rejuvenation® procedure – the extraction and replacement of the rubber crumb infill being the best way to deliver a consistent playing surface, whilst providing value for money and extending the life of the existing surface.

Our Rejuvenation® of the pitch began with the extraction of around 200 tonnes of infill, replacing it with fresh, clean rubber to help restore and improve playing characteristics such as traction, ball roll, rebound and force reduction.

A defining feature of 3G pitches is their infill levels, typically 40-60mm, compared with 20-25mm in sand-filled surfaces. We therefore utilised our patented system for this process, developed to release powerful jets of air to allow for the removal of a greater depth of rubber.

The extracted rubber was not landfilled, but rather was re-used on site to reinforce running paths and routes across the park.

The Rejuvenation® created a refreshed, softer surface with improved playing characteristics. The pitch has also been tested by our Research Engineer as part of his studies with Loughborough University and Technical Surfaces into the effects of maintenance on synthetic sports surfaces. The softer playing surface was evidenced by improved readings in force reduction and vertical deformation, as well as a reduction in vertical ball rebound. Traction was also reduced, owing to the looser state of the new rubber infill. The carpet fibres that had previously been trapped beneath the infill were now recovered, and the test results confirmed an increased 'free pile' height, allowing for reduced ball roll.

For Alan and the staff at St. George's Park, it was vitally important that the refurbished pitch now adhered to official performance standards: vertical ball rebound and ball roll, which had previously failed the FIFA 1 Star performance requirements prior to our Rejuvenation®, now passed the criteria for this standard. Furthermore, these improvements enabled the pitch to be included on the FA 3G Football Turf Pitch Register, following a successful test report conducted by Labosport.

"The work carried out by Technical Surfaces of the Beckham pitch has dramatically improved the playability and allowed us to continue to provide users with an acceptable surface", explains Alan. "This is all the more remarkable when you consider the surface is 14 years old. It has allowed the business the time to properly plan a replacement. I would recommend the process to other users with aging surfaces."

Technical Surfaces has helped bring many 3G pitches up to standard for either FA or FIFA accreditation. To find out more about our specialist maintenance services, call our National Office on 08702 400 700 or visit www.technicalsurfaces.co.uk.



INNOVATIVE SOLUTION FOR MULTI-USE FIELDS

SCHMITZ FOAM

This multi-use field was completed last January by our partner Polytan in Centennial Park Sydney. A synthetic turf system with a ProPlay-Sport shock and drainage pad was applied.

The multi-use field is an innovative solution to give a variety of different sports and sports teams the opportunity to play and practice in the same area.

The goal for the Moore Park Synthetic Field was to overlay a number of aged netball courts with a modern synthetic field offering multi-sport activity to the local user groups.

Polytan proposed an exclusive patented system of drainage cell, ProPlay Sport shock pad with LigaTurf RS+260 COOLplus football turf meeting the performance criteria for FIFA, World Rugby and NRL. The drainage cell proposal eliminated the need to disturb the stable earth of the parklands ensuring a solid, well graded base retaining its long-term stability.

The football field, with multiple line marking is now heavily booked for team activity and compliments the nearby sports and recreation facilities. Not only are long established clubs playing and training on the surface, but small team sports activity is heavily booked beyond original expectations. An ideal balance of player comfort and resilience, with durability testing exceeding FIFA's standards by more than ten times – allowing the system to greatly exceed the needs of the school requirements enhancing utilisation for various school, and possible community, activities.



RE-MATCH TURF TIPS: WHEN TO MAKE A REPLACEMENT CALL?

RE-MATCH

When should you as a pitch owner make the replacement call?

A number of (local) conditions will usually play a major role determining the actual, technical lifetime of your artificial turf system. The most important factors include the original product quality of the used infill and carpet; the construction of the base and under layer; the wear and tear from players, maintenance machinery and unauthorized users as well as all-year weather conditions.

The technical life time

By normal usage, the technical lifetime for standard artificial turf systems average 8-10 years. Hereafter you should be expecting: Loop holes in the carpet, which are hard to mend. Thus, players are likely to face a higher risk of injuries. In addition, it may become almost impossible to regain an acceptable playing condition around the mended spots. The grass fibers are worn and torn – also, they often lie flat. It may be very difficult to brush up the fibers, making it impossible to secure proper playing conditions (speed of the ball). Over time, the volume of external impurities will grow and thereby pose a hazard to the health of the players and create drainage problems.

Such impurities may include fractions of glass, metal, pencils, capsules etc. During the usage, small particles will loosen from the material fractions of the turf system. These rub-off particles are likely to stick-together and clog up the drainage system. As a result flooding is likely to occur and subsequently the infill will "sail away" – even beyond the boundaries of the pitches. During wintertime, the pitches will be covered by ice, because of a clogged drainage system.

Costs

Maintenance of old and new pitch systems. At some point in time, owners of artificial turf systems are faced with maintenance costs for an old turf installation, which are likely much higher than the depreciation of a new pitch. In addition, it is worth noting that product development is really moving fast these years. Investment in third or 4th generation pitches will normally help the pitch owner to reduce the maintenance costs considerably – and with clearly improved playability, new pitches are likely to attract a wider crowd of players – maybe from a higher league, which will often overcompensate and justify an investment.

Sponsors are also more attracted to the new generation of pitches. Do not forget to include additional sponsor opportunities in your final calculation.





FIBER PERFORMANCE INDEX				62
TEAR 51	RECOVERY 82	U.V. 48	FEEL 62	TESTED BY LABOSPORT

WHY THE FIBER PERFORMANCE INDEX WILL CHANGE HOW PEOPLE BUY ARTIFICIAL TURF

FIELDTURF

Almost everything we buy today — from books to cars — is subject to a rating system designed to help consumers invest in the best possible product. The more reliable the source or individual reviewer, the greater the public trust put in that particular ranking.

For years, organizations investing in artificial turf, did not have an objective source of information to turn to when it came to factors such as durability and resilience in competing surfaces. Thankfully this has now changed however, with the advent of Labosport's Fiber Performance Index.

Responding to the needs of architects, facility owners and venue operators, Labosport — a sport-surface certification company — introduced the Fiber Performance Index in late 2015. Considered the first true measurement of fiber quality, the FPI establishes a rating for turf fiber and helps turf consumers understand and weigh the qualities of an individual product's turf fibers.



FieldTurf is actively involved in the FPI programme, which as an independent concept, focuses on three key factors:

Durability, measured by UV exposure and fiber wear resistance.

Resilience, measured by the recovery of the fiber after compression.

Softness, measured by the feel of the fiber.

These key aspects are measured by 4 specific tests:

- **Tear:** Measures a fiber's cross tenacity; this test is commonly used by the plastics industry for quality control purposes.
- **Recovery:** Measures fiber resilience after an exhaustive 6,000-cycle compression test; this test uses specially designed equipment to reproduce athletes running on a field.
- **UV:** Measures a fiber's resistance to UV exposure; this test is designed to match the most demanding standards.
- **Feel:** Measures a fiber's softness using an innovative method from the consumer goods industry; qualified technicians conduct this test, and results are processed through a statistical model to ensure repeatability and accuracy.

Fiber is measured after undergoing this battery of tests and is then assigned a grade based on a scale of 1 to 100 in each category. The result is a final Fiber Performance Index number, which describes the overall fiber quality. The higher the number, the better.

An example of a FPI score would look like this:

- Tear:** 51
- Recovery:** 82
- UV:** 48
- Feel:** 62
- Fiber Performance Index:** 62

It's important to remember that the choice of fiber is only one of many important decisions that need to be made when installing an artificial turf field. As significant as the FPI is, other components of the turf system — such as infill, backing, drainage and construction — are equally important. The best combination of them all results in the artificial turf field of your dreams.

At FieldTurf, we continue to certify our systems according to the FPI programme, making it easier for all project stakeholders to make an informed choice.



CRUYFF COURT INSTALLED AT THE UN HEAD OFFICE IN NEW YORK

TEN CATE THOLON

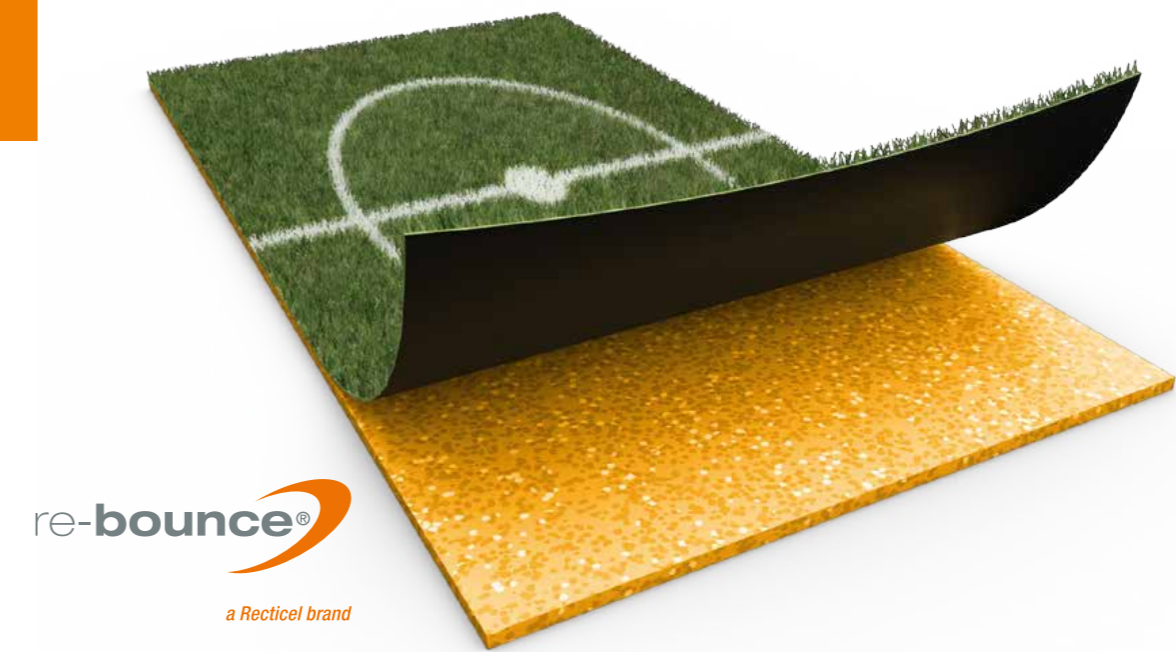
Together with former Dutch soccer legends the UN ambassadors have played a tournament in June on the temporarily installed Cruyff Court. Even Dutch Minister Bert Koenders was there and participated during the soccer tournament.

“Sport, and especially football, brings people and communities together by emphasizing similarities and building bridges between different views, cultures and people. Football opens doors and makes things negotiable,” according to Minister Bert Koenders. The aim of the event was to raise awareness for the important role of sport in promoting peace, development, health and education. “On this day the unifying power of football symbolizes that the Netherlands is a partner for peace and development,” said Mr Koenders.

The Cruyff Foundation and the KNVB WorldCoaches are joining forces to provide children from all over the world with opportunities to exercise. “That fits perfectly with the commitment of the UN to make sport part of programs for development and peace.”

TenCate Grass has been a longstanding partner of the Cruyff Foundation and produces the artificial grass fibers for the Cruyff Courts. There are now more than 200 courts worldwide constructed and this number will continue to rise in the coming months. Sport connects people and the Cruyff Foundation is aimed at inspiring young people so they can exercise together and develop themselves.

PROTECTING



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re-bounce® shock pads for player performance, comfort and safety

re-bounce® shock pads are specially tailored for different sports, always easy to install and will last over the lifespan of several artificial turf carpets. Our shock pads offer homogenous sport-functional properties over the whole pitch, efficient heating if there is field heating, cooling in warm climates and perfect drainage.

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STATIC ELECTRICITY & SYNTHETIC TURF

Static electricity occurs when electric charges accumulate on an object's surface; this is commonly a result of two materials moving apart or rubbing together. Very dry air and cold weather increases static electricity, so static shock takes place more often in the winter when the air is especially dry.

Static electricity occurs when electric charges accumulate on an object's surface; this is commonly a result of two materials moving apart or rubbing together. Very dry air and cold weather increases static electricity, so static shock takes place more often in the winter when the air is especially dry.

For most a static shock is nothing more than a nuisance, but for others, especially those using hearing aids it can be more serious as the static electricity can damage the sensitive electronics within the hearing aid.

On a synthetic turf surface the normal actions of play and use can cause a triboelectric charge to build up under certain conditions. This is quite normal and not a defect of a particular product or installation. The phenomenon occurs most frequently on newly installed surfaces and the frequency and intensity tends to diminish over time, with occurrences being unusual on installations of six months old.

When static electricity does occur on a synthetic turf surface it can have several effects. On surfaces with infill's, the infill will sticking to the pile blades of the surface and also to players clothing. Occasionally, a static discharge can result in a person feeling a small static shock when they touch something like a gate or fence. This has led some manufacturers to develop anti-static technology into the yarns from which the synthetic turf pile is made. These are most commonly used for landscaping turfs.

If the build-up of static electricity is not too frequent it can be treated by applying a wetting agent or commercially available fabric softeners, with a wide area sprayer, to the surface. It is important to note that when applying any form of chemical to a synthetic turf surface the advice of the surface manufacturer must always be sought as many chemicals can have an adverse effect on the integrity of the surface and cause premature deterioration.



SCENES FROM THE OFFICIAL OPENING OF THE FIRST RE-MATCH FACILITY

RE-MATCH

The world's only solution for sustainable recycling of synthetic turf

We would like to thank everyone who participated in the official opening of the first Re-Match facility. The opening highlighted the beginning of a brand new green industry with a worldwide potential.

Synthetic turf is gaining popularity all over the world. Especially in soccer fields, where the turf not only extends the playing season, but also reduces maintenance and water needs. Re-Match is the only company in the world that has developed a process for sustainable recycling of synthetic turfs. The industrial process is patented, and guarantees 99% recycling of the complete pitch.

Where other companies offer to shake sand and infill out of the worn-out turfs, and carpet – Re-Match rolls up the entire turf and takes it to the processing plant for sustainable recycling.

A new high-tech plant

At the efficient, high-tech plant the turf is cut up, dried, separated and cleaned – without using water. The result is four clean materials without creating additional waste products.

The 99% clean sand and rubber, grass fiber and backing is of the highest quality, and a regularly quality tested by an external institution. All elements can either be re-used within the turf industry or be recycled into new, different quality products within other industries.

Watch scenes from our opening here:
re-match.dk/news



CONTINUED PARTNERSHIP FOR TENCATE GRASS AND KNHB

TEN CATE THIOLON

The Royal Dutch Hockey Association and turf producer TenCate Grass will continue their successful partnership, which began a few years ago at the World Cup Hockey in The Hague.

As part of the collaboration, the artificial turf hockey pitch for the new Wagener stadium by TenCate Grass will be equipped with the latest GreenFields® TX surface. This pitch will be built in time for the 2017 European Field Hockey Championships.

The state-of-the-art GreenFields® TX artificial turf pitch, is being developed in close collaboration with elite hockey players and will focus on the optimum properties for player performance at top international hockey level.

Leading hockey System

Ton Raaphorst, Managing Director of TenCate Grass EMEA, is enthusiastic about the ongoing collaboration: "We are delighted that our excellent relationship will be continued with the KNHB. Along with the KNHB we strive for further sustainable development of our GreenFields hockey systems, aimed at optimum playability opportunities for both elite athletes and grassroots hockey in the Netherlands.

A renewed partnership

Erik Gerritsen, Director of the KNHB, also welcomed the continued collaboration with TenCate Grass: "The KNHB strives to build long-term relationships with its partners, sponsors and suppliers. We are proud that TenCate Grass in the coming years will remain with us. The extended collaboration also assures us a good playing field for the European Championships in 2017 in Amstelveen."



SYNTHETIC TURF FAQs

Q: What is synthetic turf?

In its simplest form synthetic turf is a carpet that is designed to look like natural grass. Primarily used for sporting and landscaping applications synthetic turf is actually specially engineered to not only look like natural grass but to also provide the user and durability characteristics required to deliver safe long lasting surfaces. When used as a sports surface it needs to offer the playing characteristics the sport requires, provide a safe and comfortable playing environment and be able to withstand high use often for 10 years or more. As a landscaping solution, synthetic turf provides a low maintenance surface that does not need to be watered or fertilized, whilst maintaining the visual appearance of a well-manicured lawn.

Q: Are all types of synthetic turf the same?

No, as synthetic turf technology evolves the range of products grows. The first synthetic turf products were actually developed in the 1960s with the first major installation at the Houston Astrodome in 1966 meaning synthetic turf has been in use for 50 years.

The first generation of surfaces were short pile (12 -15mm) dense non-filled surfaces, manufactured using a knitting technique from nylon yarn. This type of surface has evolved and is now used for sports such as hockey, cricket and lawn bowls.

In the 1970s the second generation of surfaces were developed. The piles of these surfaces were more open and longer (20 -25mm) and relied on a sand infill to support the pile and keep it standing upright. Used extensively for a range of sports these surfaces pioneered the growth of community use synthetic sports fields throughout Europe.

The third generation of surfaces were developed in the late 1990s. With even longer pile lengths (50 – 70mm) and even more open constructions, the surfaces incorporate a blend of infills that provide the desired

cushioning and sports performance properties. It is this form of surfacing that has seen the acceptance of synthetic turf by sports such as football and rugby and created the growth in synthetic turf that now allows high quality, high intensity use sports fields to be provided in locations and climates that previously could not consider playing on anything that was vaguely like a natural grass field.

Q: Is there a fourth generation synthetic turf surface yet?

There are numerous claims about new innovations creating the next generation in synthetic turf technology, but there is no overall consensus that a significant step forward has occurred that moves the use of synthetic turf into new applications or greatly improves the quality or play. Many manufacturers are trying to develop synthetic turf surfaces that can fully replicate the playing qualities of natural turf without the need for infill; these may become the fourth generation.

Q: How is synthetic turf made?

Synthetic turf surfaces are manufactured using technologies developed by the carpet industry. Today most synthetic turf surfaces are manufactured using tufting techniques, where the pile is looped through a backing cloth, cut to length and anchored in place. Other carpet manufacturing techniques used include weaving and knitting.

The pile of the synthetic turf, forming the blades on longer pile surfaces, are manufactured from a range of plastics including polyethylene, polypropylene and nylon. The yarns manufactured from the plastics are becoming increasingly complex in profile as manufacturers strive to produce ever more durable and natural looking surfaces.

Q: Why has synthetic turf become so popular over the past few years?

Increasing demands to play sport seven days, many hours a day and the desire to play or provide green landscaping in climates where natural grass cannot be grown, have seen synthetic turf becoming the surface of choice for many. Demand has grown to the point where more than 10,000 synthetic turf sports fields and courts are now used throughout Europe in schools, colleges, parks and professional sports grounds.

Q: How popular is synthetic grass for landscape and recreation use?

Synthetic grass for landscape, and other recreation applications is the fastest growing segment of the synthetic turf market. Over 4 million square metres of synthetic turf for landscape and recreation use was installed in 2012.

Q: How is synthetic turf being used in the landscape and recreation market?

Thousands of homes, businesses, golf courses, municipalities, parks and tourist attractions now use synthetic turf to provide a lush, attractive landscape that requires minimal maintenance and saves millions of litres of water each year.

Synthetic turf also promotes greater use of land, as you can accommodate far more use on an area than with natural grass. A common (but conservative) guide often used by planning authorities is one synthetic turf sports field can be considered the equivalent of three natural grass fields.

Q: How do you assess the quality of the different types of synthetic turf products?

As the range of synthetic turf products entering the market becomes ever greater it becomes ever more confusing to the consumer and the risk of selecting a poor quality product increases. Recognising the need to give guidance and protection to consumers a number of sports federations including FIFA (football), FIH (hockey) and World Rugby have developed comprehensive standards that define the playing, safety and durability qualities they consider necessary for their sports. The European Standards Committee (CEN) has also developed European Standard EN 15330-1 that describes the performance and durability properties multi-sports synthetic turf surfaces should have.

To promote high quality synthetic turf landscaping surfaces ESTO has developed a Landscape Quality Classification that sets criteria for the quality, durability, environmental compatibility and appearance of landscaping surfaces.

Q: Is synthetic turf safe?

Like many new innovations synthetic turf has been subjected too much scrutiny about how safe it is. For sports applications, players have wanted to be confident that the risk of injury when playing on a synthetic turf field is no greater than when playing on natural grass. For sports and landscaping applications there is a need to ensure synthetic turf surfaces do not create environmental or toxicological risks.

Numerous studies by various international sports federations (FIFA, UEFA, World Rugby, etc) have all shown that the risk of injury when playing on a synthetic turf field that is constructed and maintained to the appropriate standards are no greater than playing on a well-constructed natural grass field. When synthetic turf fields are compared to poorly maintained grass fields the injury risk is considered to be lower on a synthetic turf field.

Potential concerns about the environmental and toxicological risks of installing and using synthetic turf surfaces have led to numerous robust scientific and academic studies from Europe and the USA that have concluded that synthetic turf surfaces manufactured from high quality materials from reputable sources provide surfaces that cause no public health concerns. Studies include those by the U.S. Consumer Product Safety Commission and U.S. Environmental Protection Agency.

Q: Why has synthetic turf become so popular over the past few years?

Increasing demands to play sport seven days, many hours a day and the desire to play or provide green landscaping in climates where natural grass cannot be grown, have seen synthetic turf becoming the surface of choice for many. Demand has grown to the point where more than 10,000 synthetic turf sports fields and courts are now used throughout Europe in schools, colleges, parks and professional sports grounds.

Q: Do synthetic turf surfaces need maintaining

Yes, all synthetic turf surfaces require some form of maintenance. On a simple ornamental landscaping turf this may be just a periodic brush and tidy-up. On a high use sports area the maintenance demands will be much more demanding and complex. It is important that when considering synthetic turf you appreciate there is no such thing as a maintenance free synthetic turf and you make adequate allowance for the necessary maintenance.

Q: Can a synthetic turf surface be recycled at the end of their useful life

Increasing concerns about the environment mean that manufacturers of synthetic turf are looking at ways of easing the recycling of the products at the end of their service life. Repositioning of old synthetic turf is now commonly done and as new technologies come on stream full recycling will become the norm.

Q: How do I know I am buying synthetic turf from a reputable manufacturer?

As the market for synthetic turf expands so do the number of companies entering the supply chain. Many of these are new with little track record. To become an ESTO member a manufacturer has to be a well-established and reputable manufacturer. In addition a number of international sports federations also have licensing schemes that help identify and promote quality manufacturers with proven sports products.

Q: Can synthetic turf have a positive impact on the environment?

Synthetic turf can have a measurable, positive impact on the environment. Depending on its location a typical grass sports field can require up to a 4.5 million litres of water each year in drier climates. This water use can be saved when synthetic turf is installed. Additionally synthetic turf eliminates the need for harmful pesticides and fertilisers, which has significant health and environmental implications. When used for landscaping synthetic turf helps reduce noxious emissions from lawn movers and reduces grass clippings, which are reported as the third largest component of municipal solid waste in landfills.

Q: What impact does synthetic turf have on playing time?

Synthetic turf playing fields exponentially increase playing and practice time because they can be used daily and in all types of weather, without worry of damage. Playability is enhanced since the fields remain uniform and consistent, season after season providing they are maintained correctly. High quality natural grass sports fields can only accommodate 6 to 10 years use per week but require extensive maintenance and renovation works to achieve this level of use through a playing season. Lower quality grass fields are often not capable of accommodating even this limited amount of use, but are actually expected to be available for community play through a season; often meaning games have to be cancelled.

Q: How does the cost of a synthetic turf field compare to a natural turf field?

A top quality natural turf field installed in a stadium environment can cost in excess of €1,000,000, which is at least double the cost of the highest quality synthetic turf constructions. Lower quality natural turf fields will cost much less than a synthetic turf field but in reality are only able to accommodate a fraction of the usage. Whilst both types of surface require maintenance the cost of maintaining a synthetic turf field is normally equal to or less than maintaining a natural grass field. Synthetic turf fields do have the disadvantage of needing resurfacing periodically but nevertheless when comparing capital, maintenance and replacements costs and calculating the cost per playing hour synthetic turf is the clear winner.



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