



ESTO

European Synthetic Turf Organisation

HALF TIME

ESTO TECHNICAL PUBLICATION



**HARMONIZE UV TESTING FOR
SYNTHETIC TURF FIBERS**

**TIGERTURF UNVEILS
TENCATE ECOCEPT**

PLUS:

- » INNOVATIVE NO-PIPE DRAINING TECHNOLOGY
 - » IMPROVED ARTIFICIAL TURF SYSTEM
- ...AND MUCH MORE**



TIGERTURF UNVEILS TENCATE ECOCEPT

A NEW GENERATION OF RECYCLABILITY FOR ARTIFICIAL GRASS PITCHES

Leading manufacturer TigerTurf UK has unveiled TenCate Ecocept™, a pioneering new base layer system which makes use of recycled plastics and old artificial surfaces in the construction of brand new artificial grass pitches (AGPs).

Providing a comprehensive solution to the issue of what to do with ageing AGPs, the environmentally-friendly base layer from the manufacturer's parent company TenCate also carries a host of benefits for ground stabilisation, drainage, sports performance and overall environmental impact.

Ecocept has been specially developed to prevent as many used materials as possible from going to landfill, with up to 90 per cent of the product made from otherwise landfilled products such as end of life plastics and rubber crumb. Not only does this offer an option of closed-loop recyclability, but it has the potential to save as much as 140 tonnes of materials from going to landfill - the equivalent of £30,000 in costs - compared to traditional installations.

The carbon footprint of each new pitch is further reduced by the layer's high load-bearing capacity meaning fewer truckloads of soil are removed at the installation stage. Meanwhile, impressive drainage properties help to avoid costly trenched drainage below the field, making the solution as cost effective as it is useful.

Given that the new base layer is compatible with many of TigerTurf's synthetic turf products, the manufacturer can now offer a complete and eco-friendly solution for investors looking to reduce their impact on the environment without compromising on performance.

Paul Langford, Managing Director at TigerTurf UK commented: "The traceability of materials and what happens to surfaces after they are recycled is an increasingly important issue within the industry, and we're thrilled to be able to deliver a simple but comprehensive solution.

"Research and development is at the heart of everything we do and it's fantastic to be able to demonstrate this commitment with the launch of this innovative new system. Not only does Ecocept give a new lease of life for surfaces which would otherwise end up in a landfill, but its versatility and performance extends the array of benefits TigerTurf surfaces can offer."

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



GREATNESS IS IN OUR TECHNOLOGY: ENKA FLEX H BONAR YARNS

Brand new to the Bonar Yarns product portfolio is Enka Flex H, a unique hybrid technology for synthetic turf surfaces.

Enka Flex (H) is a unique technology which combines shock absorption and drainage in one product, which can be used as a layer underneath various synthetic turf systems. As an essential component of the overall turf system it provides surfaces with excellent horizontal drainage and outstanding shock absorbency – two highly sought after characteristics available in one pad.

The Enka Flex (H) technology ensures even energy distribution throughout the pad to further enhance player comfort and safety, alongside performance – this makes the product perfect for use within both engineered and dynamic bases. It also has the ability to exceed guideline expectation for water permeability, for those requiring excellent drainage capabilities.

The combination of these two functions in one product provides significant cost benefits in the

provision of synthetic turf surfacing systems without compromising on performance. Enka Flex can also withstand the same level of impact throughout an entire match, without compromising shock absorption at any time.

The technology is so advanced that in terms of longevity, Enka Flex (H) can be re-used over more than one life cycle of synthetic turf – providing further cost benefits.

When installing Enka Flex (H) there is no need for highly specialized installation skills or the expensive costs associated with equipment. Enka Flex (H) facilitates portability as it can be easily laid, later uplifted and then re-laid, further providing significant cost savings and a system ideal for remote areas or areas with poor access.

Having been tested on various surfaces and varying weather conditions, Enka Flex (H) passes all industry requirements to ensure the surface is resistant to expansion and can meet the standards set by both FIFA and FIH.

Overall the ENKA Flex (H) product is one of a kind, and one that has the ability to provide a new technology for various synthetic turf systems – the future looks bright for Enka Flex (H).



RECYCLING WORKING GROUP

CHAIRMAN PETER MACKEY (PU CONSULTING)

The Recycling Working Group (RWG) is not as developed as many of the other ESTO work groups since the subject of recycling is not as well defined as developments in Shock Pads, Infill or Yarns, for example.

ESTO realises that managing end of life synthetic turf is a “ticking time bomb” due to the very real market growth numbers of up to 35% per annum ten years ago, and there are no generally accepted means of recycling the used materials.

Synthetic turf has grown phenomenally since the year 2000 and is now used across the globe in a wide variety of sports, landscaping and leisure applications. The last AMI report claimed that over 100 million m² of synthetic turf were laid globally in 2013 and that market growth will soon return to pre-recession levels. Since synthetic turf sports surfaces have a finite life, they eventually need to be replaced. It has been estimated that 98% of all synthetic turf sports surfaces will be replaced with another synthetic turf field. It is very rare for an old field to be returned to natural turf, except in very special circumstances.

This growing amount of turf that has reached the end of its life needs to be managed responsibly, as it is classified as waste according the EU Waste Framework Directive (Directive 2008/98/EC), and it is a criminal offence in many parts of the globe to lift, transport and store used synthetic turf without a waste licence! ESTO’s own recommendation from 2009 is to send used turf for energy recovery via incineration, but this is not practical or acceptable in some EU countries.



The RWG aims to provide some background and insight into the issues surrounding end of life synthetic turf and to suggest some options to enable companies involved in replacing used synthetic turf sports fields, make informed decisions about the process.

NO-PIPE DRAINING TECHNOLOGY FOR YOUR PITCH

MAPEI ILLUSTRATES HOW MAPESOIL TECHNOLOGY ENHANCES THE DRAINAGE PERFORMANCES

After more than two decades of intensive use, during the 2013-2014 football season the Mapei Stadium pitch highlighted issues related to the grass cover due to the excessive wear, caused mainly by the loss of effectiveness of the deep drainage system of the field.

In fact, the pitch was flooding during heavy rains and needed a preventive protection with tarpaulins.

Moreover, when precipitations occurred during the match, the excess of water on top of the grass surface could lead to unacceptable playing conditions for the professional football team involved, Sassuolo.

Therefore, a complete re-construction of the playing field was mandatory in order to renovate the drainage of the area as required for a Serie A top league team. The works began in June 2014 and consisted of the innovative draining technology installation, named Mapesoil.

MAPESOIL: INNOVATIVE NO-PIPE DRAINING TECHNOLOGY

The great innovation of the draining system installed at Mapei Stadium's pitch is the absence of the traditional pipes network distributed all over the field: in fact all the water of the pitch is collected by a drainage blanket built within just 8 cm thick screed, using the high performance hydraulic binder Mapesoil VD. Water flows then to the pitch edges by gravity, thanks to the cross fall, and reaches for the lateral collector drain. Mapesoil VD draining blanket is usually laid over the existing native soil properly stabilized by Mapesoil 50, a powder agent which allows consolidation of the soil and makes it impervious, driving then the water flow to sides of the area, through the upper porous layer made of Mapesoil VD.

Draining performances of such a system have been tested and certified by the accredited laboratory Labosport and are significantly higher than those ones measured for traditional solutions, such as crushed stone and piping.

Besides, this technical solution provides for several advantages. The drainage of the field constructed with Mapesoil VD significantly reduces the total thickness of excavation and therefore the disposal costs for the spoiled soil.

The drainage of the new surface also allows to store and reuse the water sent to the sides of the field by exploiting the existence of a water channel along the perimeter. MAPESOIL technology, facilitating the flow

of water, allows more accurate control of the moisture content of the substrate and hence improves the living conditions of the grass, at the same time reducing the maintenance costs (including the heating system cost!).

The whole facility went through a significant renovation project and Mapei Stadium pitch was then awarded to host the Women' Football Championship Final on the 26th of May. Nice to remark that both matches of Men's and Women's Football Championship 2016 in Italy have been played over a pitch having a Mapesoil technology sub-base.

Mapei has 79-years of experience in manufacturing adhesives, sealants and chemicals for building, including a wide range of products tailor made for sport flooring (artificial and hybrid turf installation, acrylic resins for tennis courts, etc). Mapesoil technology was successfully installed for many top Italian football clubs pitches, such as Juventus F.C., A.C. Milan, F.C. Inter, U.C. Sampdoria, Genoa C.F.C., A.C. Chievo-verona, Atalanta B.C., Cagliari Calcio, etc.





IMPROVED ARTIFICIAL TURF SYSTEM

HATKO has improved a completely innovative artificial turf system and succeeded in lending the artificial turf even more natural characteristics by combining monofilament and fibrillated yarns with knit-de-knit technology and varying pile height. This results in improved ball roll behavior as well as in a more natural look of the turf. HATKO R&D engineers have designed its amazingly realistic look that comes from a complex pile construction (Triple Pile Height Technology™) and a sophisticated combination of materials. This gives the footballer a peerlessly natural feeling and makes technically high-quality football possible in all weather conditions.

Triple Pile Height Technology™ uses two yarns together in a needle plus one additional curly yarn in a tuft thus providing a strong and all weather conditions resistant artificial turf system. The grass yarn stands up perfectly straight due to its specific profiling and the

close construction of the grass surface and springs back perfectly after each time it is pressed down.

Successful innovative combination of monofilament HATKO exclusive Omega yarn that has excellent resilience, ball roll, rotational resistance, ball rebound and natural look, with fibrillated yarns that have better performance on the durability coverage and infill capsulation, plus the new KDK curly yarns that are aimed to provide additional resilience to strong great performing Omega, introduces players the advantages of different yarn systems.

More information is available at:

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YARN WORKING GROUP

**CHAIRMAN
FRANS HARMELING
(TEN CATE)**

One of the projects for the YWG, established in Istanbul at the end of 2014, was to harmonize UV testing for synthetic turf fibers.

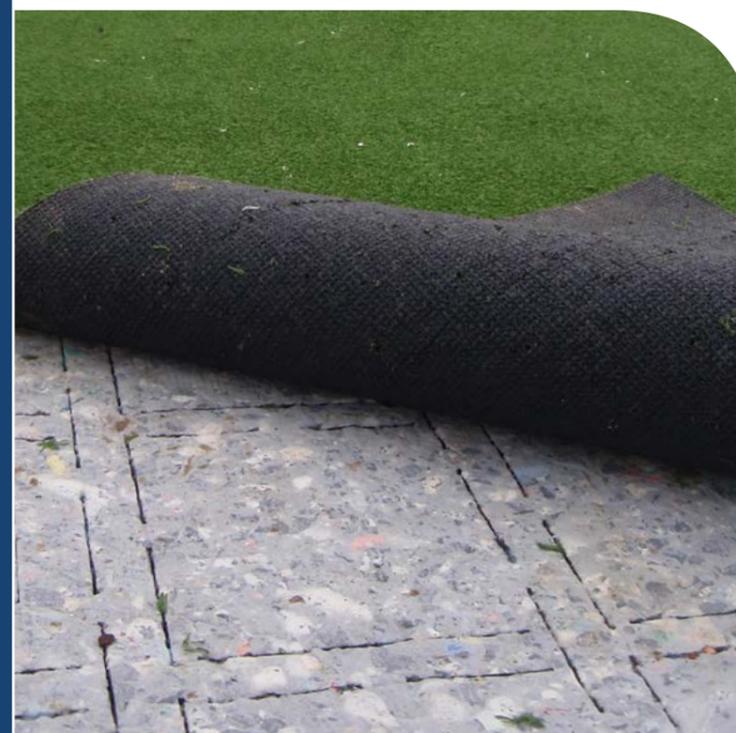
During its first meeting in January 2015 in Amsterdam, a group of experts looked into the current applied test methods, being UVA and UVB, for UV stability testing of artificial turf fibers.



After extensive investigation the YWG formulated a proposal aiming for “better” and “less” testing!

This proposal now, being robust UVA testing at 5000 instead of 3000 hours, is already included into the new FIFA manual and probably will be adapted into other sports bodies standards like world rugby, FIH etc. so good news all together.

IMPROVING THE SHOCK ABSORPTION FOR HOCKEY PITCHES



For hockey pitches, in-situ installed e-layers are used to level the sub-base and improve the shock absorption. Although e-layers are long lasting, they are quite expensive and not always easy to install. If you are looking for an alternative, the ProPlay-Sport15/215 shock pad is the best choice! Compared to other shock pads, it has all the benefits of an e-layer due to its high thickness (15 mm) and density (215 kg/m³). Consequently it has an excellent durability, which makes reuse possible when replacing the synthetic turf. Contact us if you want to know more about our solutions for hockey pitches.

ProPlay

by Schmitz Foam Products

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



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.

FieldTurf® THE ULTIMATE SURFACE EXPERIENCE
A Tarkett Sports Company

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MORE THAN 10,000 FIELDS WORLDWIDE

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RECTICEL The passion for an

PROTECTING

re-bounce® a Recticel brand

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.

A perfect match of performance and sustainability!

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ULTRA-FIX ADHESIVE



High performance Ultra-Fix Adhesive from Envirostik is increasingly specified for seam jointing artificial grass sports surfaces, in conjunction with specialist seaming tapes. This is in response to the trend towards specialised individual sports surfaces and the increasing importance of high joint strength specifications. The combined system of adhesive and tape has been rigorously tested and proven to meet FIFA, GAA, FIH and IRB standards. Ultra-Fix 2-component adhesive was specially formulated to give high strength seam joints. It retains its consistency over a wide temperature range and can be trusted to perform even under adverse weather conditions.

www.envirostik.com / +44 1889 271751





FIELDS

WITH A SHOCK PAD EXCEL

Recent study shows that football fields still meet high quality standards after 10 years

Artificial turf football fields based on a shock-absorbing layer continue to meet FIFA quality requirements after 10 years of use, as results of a recent monitoring study show.

The monitoring was completed earlier this year. "Over the past decade we have consistently tested football turf throughout the Netherlands, and particularly in the city of Utrecht. Of the 41 artificial grass football pitches in Utrecht, 28 are built on a shock pad", says Frenk Stoop of Alveosport.

"We wanted to monitor the longevity of sports-related properties of the fields over a long period of time, to obtain more experience." In the study, fields were subjected to the same tests as those used by test institutions when they determine whether an artificial turf system meets FIFA One-Star or FIFA Two-Star standards. "The study shows that the shock absorbency and the ball-bounce characteristics of fields with a shock pad remain high for a longer period of time than for the so-called rubber-infill systems."



The earliest fields with a shock pad in the study date back to 2006. "At that time, serious concerns were raised about SBR granulate being detrimental to both public health and the environment. The city of Utrecht changed its approach in selecting artificial grass football fields. That's why only alternative infill material has been used in all new artificial grass football fields installed since 2006", explains Michiel van Koningsbruggen, Project Manager, Agricultural Engineering at the City of Utrecht. The results of the study confirm that systems with an alternative infill in combination with a shock pad maintain their sport performance over a longer period of time. The municipality of Utrecht sees this as a confirmation of following the right strategy.



Experience the innovative shock pad for artificial turf

More than 600 successful installations worldwide!

Alveosport excels by:

- ▶ Optimized sports performance
- ▶ Extended durability and constant performance
- ▶ Fast and easy installation
- ▶ Excellent environmental profile

We are looking forward to support you in the design of your artificial turf system. Please contact:

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