



TigerTurf Range 2010
an informed selection

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The roots of synthetic turf



Reach for the Stars

TigerTurf lists all of its best products under the star range. They are designed, recreated and manufactured in-house by a team of industry experts and are played on by professionals.

These products feature unique yarns developed by our R&D team in conjunction with the world's best yarn manufacturers. Star products are backed with the Dual Locking System for extra robustness and undergo stringent testing to the highest standards set by governing bodies of sport, offering exceptional wear resistance and performance. But what does all this mean?

Terminology used within the synthetic turf market is often confusing and products can be difficult to differentiate. TigerTurf aims to break down the barriers by highlighting the key points to consider when selecting a synthetic turf surface – allowing customers to feel safe in the knowledge that they can use this information to select the most suitable surface for all their requirements.

Of course, some projects are restricted either spatially or financially and TigerTurf do offer product solutions to suit a variety of requirements and budgets. However, research has shown that cheaper, poorer quality surfaces need to be lifted and replaced more quickly than well designed, high quality products. TigerTurf surfaces always aim to give greater value for money and greater return on investment.

Types of yarn

Traditionally there are three different types of yarn used in synthetic turf:

- Polyethylene (PE): Soft, durable and non-abrasive
- Polypropylene (PP): Rigid, brittle and more abrasive
- Nylon (PA): Hardwearing and abrasive



However recent innovations in extrusion technologies have enabled us to develop a new type of yarn, using fully recycled polyester (PET) flakes. 100% recycled – 100% innovative.

Please contact us for more information on PET yarn and TigerTurf's greener products.

The yarn manufacturing process enables different constructions of yarn to be extruded:

Monofilament (ideal for rugby and football): Individually created filaments twisted or wrapped together. Monofilaments offer increased durability, resilience and ability to cope with high usage. The manufacturing process enables the yarn to be formed in different profiles and thicknesses.

Fibrillated (ideal for rugby and football): Manufactured as a tape that is perforated lengthways to create a strong lattice structure which splits down with use to produce a multi-fibre appearance.

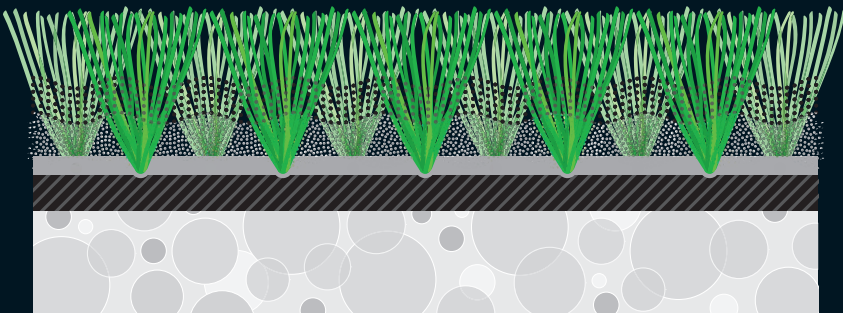
Knit-de-knit (ideal for hockey): Straight yarn that is given a tight curly appearance through a knitting process, producing a non-directional surface.

Texturised (ideal for tennis and hockey): Straight yarn that has been heat-set to produce a tight, curly appearance which gives a non-directional surface.

Systems and Infills

There are four main types of synthetic turf systems on the market:

- 1. Fully synthetic:**
An all-fibre construction with no added infill. Water is normally required when used for hockey.
- 2. Sand filled:**
A lighter weight surface filled with high levels of sand for stability and performance.
- 3. Sand dressed:**
A dense, heavy surface requiring some sand infill to support the fibres and add stability. It has more exposed fibre for a greener appearance.
- 4. Third generation:**
A system containing a rubber infill for extra performance. Utilises longer fibres to hold rubber as well as sand.



 RUBBER  SAND  BACKING  SHOCKPAD  STONE / BASE CONSTRUCTION

Infills are divided into two categories:

1. **Stabilising infills:** Predominantly sand, at varying grades to weigh down the carpet and give structural integrity.
2. **Performance infills:** Usually rubber made from recycled sources, ground down into fine granules to prevent compaction, increase resilience and enhance playing characteristics.



2010 sees the introduction of greener infills. By using 100% recycled materials, we can now offer more environmentally friendly components for your synthetic turf system, that not only match the performance of traditional infills but also reduce compaction. This results in using 10% less infill, meaning they are friendlier to both the planet and your pocket. Please contact us for more information on the TigerTurf's greener products.

Pile Characteristics

Pile weight:

This refers to the quantity of yarn within a square metre of product, using the number of stitches and the gauge of manufacture. Historically, the pile weight of a product has dictated the quality and price, with the heavier products demanding a higher price in return for improved performance.

Pile height:

The height of the product gives an indication of its application and format. Most football products will have a pile height of between 40-65mm and shockpads are sometimes required for surfaces with a pile height below 60mm. Rugby surfaces always have a pile height of 65mm and are installed with a shockpad. Hockey and tennis surfaces tend to be between 10-20mm, offering different performance characteristics than the longer pile products. Generally shockpads are used in hockey but not with tennis.

Testing and Accreditations

Laboratory testing:

Different testing standards apply to each application.



Football surfaces can achieve three accreditation awards:

- **FA:** Community use performance with heavy emphasis on longevity and a prerequisite for Football Foundation funding. FA have now adopted FIFA 1 Star testing standards
- **FIFA 1 Star:** Designed for community use and has to pass a series of stringent tests focussing particularly on durability and longevity (similar to the FA standard)
- **FIFA 2 Star:** The highest professional standard, awarded to the best performing surfaces and stadia



Rugby surfaces have to adhere to IRB/RFU standards for full contact games and training activity. Testing measures the Head Impact Criteria (HIC), which has to be over 1.3m, ensuring player safety for full contact rugby in set pieces and open play.



Hockey has one awarding body with accreditations split into two levels:

- FIH National: The highest standard for surfaces with infill
- FIH Global: The highest standard for products without infill



Tennis testing relates to the ball bounce and speed of the play, to meet the needs of the player or club:

- ITF1 – Slow
- ITF2 – Medium – Slow
- ITF3 – Medium
- ITF4 – Medium – Fast
- ITF5 – Fast



Multi-use products require a mixture of performance testing depending on the desired standard and relevant applications.

Good Grass Guide

In a market with so much choice, how do you know which products deliver? TigerTurf has produced this guide to help differentiate the best from the rest. With so many things to consider, such as performance, health and safety, aesthetics, resilience and longevity, it is difficult to evaluate real value for money.

Polyethylene (PE) Vs. Polypropylene (PP)

Polyethylene yarns were introduced in the mid 90s as a viable replacement for traditional polypropylene fibre types. Polyethylene has a different polymer structure and as such has a softer, smoother texture, which creates a less abrasive product. Another distinct advantage of polyethylene is that it has a waxy, almost damp feel which is skin friendly. Polypropylene, on the other hand can be very dry and brittle, which is not only more abrasive for the player, but can also cause fibres within the surface to breakdown, leading to deterioration, bacteria and moss growth.

Monofilament Vs. Fibrillated

Fibrillated fibres are manufactured using older technology and consequently have to be artificially worn to create the correct aesthetics necessary for a synthetic turf surface. However, the lattice structure does encapsulate the infill, which significantly reduces the amount of infill movement and migration. The drawback of this encapsulation is that the infill tends to compact, requiring additional maintenance. Monofilaments are more durable than fibrillated fibres and due to the manufacturing process they can be extruded in various shapes and thickness. In addition monofilaments achieve optimum performance

immediately after installation, whereas fibrillated surfaces improve in performance and aesthetics after use. Fibrillated surfaces also have a tendency to flatten more easily. Monofilaments therefore give greater performance and increased durability, as the fibres are worn on the tip rather than the side.

Texturised Vs. Straight

Yarn structure plays an important role in the performance characteristics of a product. Texturised yarn is used in hockey and tennis products because it produces a non-directional surface that is ideal for precise and non-deviating ball roll and bounce. Straight fibres are used primarily in football and rugby applications and tend to be longer and softer than the texturised fibre. Straight fibres replicate the natural grass on which the sports are usually played. This provides resistance to the ball during play, which is one of the main criteria for football surfaces.

Profiled Vs. Flat Monofilament

In recent years there has been a tendency towards more profiled or shaped monofilament yarns. These yarns have a spine or thicker centre to give 'vertical memory', encouraging the yarn to return to its original state after ball or player impact. The flat or smooth monofilaments require additional maintenance to guarantee that they return to their original position.

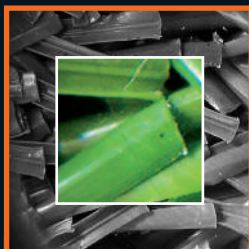
Low pile weight Vs. Heavy pile weight

The pile weight has long been the gold standard guide to the performance of products. Theoretically the greater the yarn content, the higher the durability. The volume of yarn in a product also affects performance, as players want to interact with a lush, grassy surface rather than playing on crumbs of rubber or sand.

Yarn Selection

The yarn selection process is vital to ensuring products do not prematurely wear, break down or underperform. TigerTurf's R&D department conduct stringent testing on all yarns to guarantee ultimate durability and performance for all landscape and sport applications.

Yarn condition samples



- Perfect condition
- Pre worn fibres
- High performance



- Poor condition
- Post wear fibres
- Reduced performance

Splitting and shearing

Post wear test sample conditions determine which yarns the Research & Development team will utilise.

Dual Locking Vs. Standard Backing Systems

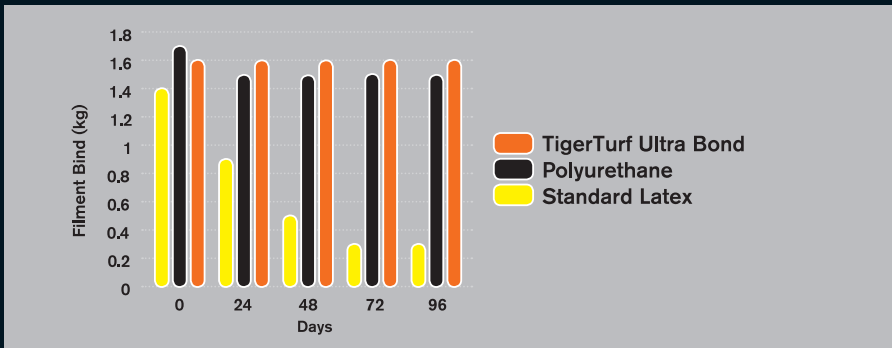
TigerTurf's Dual Locking System binds the filament on either side of the backing material for maximum tuft retention. There are three major components that make the system work:

1. Pro-Tech Xtra

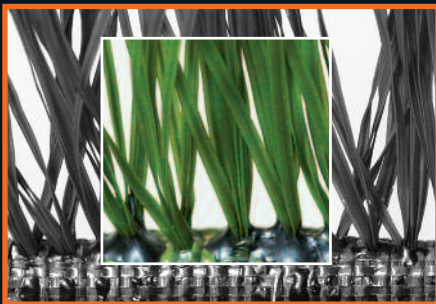
Advances in fabric production have meant that the Pro-Tech fabric used previously in TigerTurf products can now be incorporated into the primary backing cloth, thus simplifying the process and creating one stronger backing product – 'Pro-Tech Xtra'. Pro-Tech Xtra has also been upgraded from non-woven Polypropylene to non-woven Polyester with Nylon (PA). This improves strength, dimensional and thermal stability, resulting in less post expansion and contraction and better Ultra-Bond absorption.

2. Ultra-Bond

Ultra-Bond wet compound uses an advanced formula of polymers and is applied to the backing. This compound is not only unique in the way that it interacts with the Pro-Tech Xtra fabric, it is less water soluble than other systems, outperforming other compounds in the market. The tuft lock stays strong over time and fibres wear in a natural pattern rather than being pulled from the base, a characteristic that has been seen on other monofilament products in the market.



TigerTurf's Ultra-Bond out performs both polyurethane and standard latex over time.



3. RAM application

The RAM application method opens the individual fibres of each tuft to push the Ultra-Bond deep into the root of the tuft for maximum hold. This binds the individual filaments rather than just the outer tuft, again reducing fibre loss and extending the life and playability of the product.



King George V Playing Fields, Worcester



Product	Product Code	Description	Use	Laboratory Testing	Pile Weight (g/m ²)	Pile Height (mm)	Guarantee Period (yrs)
Evolution	WD18	A sand dressed, dense, texturised, polyethylene monofilament with narrow blades. Evolution is a sand dressed version of WETT, that can be used for a variety of multi-use applications.	Hockey Recreational Football Tennis Netball	FIH National, EN	1550	18	10
Total Turf	TG65	A third generation, polyethylene surface consisting of two unique profiled fibres. The S shaped (4-ended monofilament) fibre ensures the surface's recovery whilst the C profile (4-ended monofilament) encapsulates the rubber infill. Part filled with rubber and sand.	Football Rugby Gaelic	FIFA 2 Star, FIFA 1 Star, FA, EN, GAA, RFU, IRB	1650	65	8
Challenger	CH40	A medium length, texturised, monofilament, polyethylene fibre, designed to meet football and hockey requirements. Part filled with rubber and sand.	Football Hockey	FIFA 1 Star, FA, EN, FIH National	1300	40	8
Reaction	HR20	A polypropylene, knit-de-knit surface that requires a sand dressing. Specifically designed for BSF funded projects.	Hockey Recreational Football Tennis Netball	FIH National, EN	1450	20	5
MultiPlay	MP24	An open polyethylene surface designed to be filled with sand for multi-use applications.	Football Hockey Tennis	N/A	1050	24	5
MultiTurf	MT24T	An open polypropylene surface designed to be filled with sand for multi-use applications.	Football Hockey Tennis	N/A	1050	24	5

Multi-use



Nike Joga 3 tournament, Dublin



Product	Product Code	Description	Use	Laboratory Testing	Pile Weight (g/m ²)	Pile Height (mm)	Guarantee Period (yrs)
Total Turf 65	TG65	A third generation, polyethylene surface consisting of two unique profiled fibres. The S shaped (4-ended monofilament) fibre ensures the surface's recovery whilst the C profile (4-ended monofilament) encapsulates the rubber infill. Part filled with rubber and sand.	Football Rugby Gaelic	FIFA 2 Star, FIFA 1 Star, FA, EN, GAA, RFU, IRB	1650	65	8
Total Soccer 50	TG50		Football	FIFA 2 Star, FIFA 1 Star, FA, EN	1550	50	8
Challenger	CH40	A medium length, texturised, monofilament, polyethylene fibre, designed to meet football and hockey requirements. Part filled with rubber and sand.	Football Hockey	FIFA 1 Star, FA, EN, FIH National	1300	40	8
Soccer Real 60 MS	FR60MS	A third generation surface which incorporates a profiled (4-ended monofilament) fibre which ensures surface stability, promoting recovery with individual fibres. Part filled with rubber and sand.	Football	FIFA 2 Star, FIFA 1 Star, FA, EN	1450	60	8
Soccer Real 50 MS	FR50MS		Football	FIFA 2 Star, FIFA 1 Star, FA, EN	1250	50	8
Football 60	ER60ES	A third generation, soft polyethylene surface with fine fibrillated fibres designed to split into blades. Part filled with rubber and sand.	Football	FIFA 2 Star, FA, EN	1200	60	5
Football 50	ER50ES		Football	FIFA 1 Star, FA, EN	1000	50	5

To achieve a FIFA RECOMMENDED 1 or 2 STAR certificate, the product which has been FIFA laboratory tested and met all the requirements can be installed in a field. After installation a field test should take place. If the field successfully meets all the FIFA requirements a FIFA RECOMMENDED 1 or 2 STAR certificate is issued. Please note: FIFA only certify the field and not a product (laboratory test)

Football



Fitzwilliam Lawn Tennis Club, Dublin





Product	Product Code	Description	Use	Laboratory Testing	Pile Weight (g/m ²)	Pile Height (mm)	Guarantee Period (yrs)
Advantage	TA	A soft, dense, texturised, polyethylene monofilament surface with narrow blades encasing a sand dressing.	Tennis	ITF2 (Med - Slow)	1250	13	7
Volley	TV	A short pile polyethylene surface. No infill required. Ideal for indoor use.	Tennis	ITF5 (Fast)	1050	7	7
Tennis Grand Prix	TGP12T	A short-pile, polypropylene fibrillated with a Z twist fibre. Part filled with sand.	Tennis	ITF3 (Medium)	1150	12	5
Tennis Grass	TG15T	A medium length, polypropylene fibrillated with a Z twist fibre designed to be filled with sand.	Tennis	Not graded	1200	15	5
Rally	TCLT	A polypropylene fibrillated surface with red infill. Designed to replicate a clay court.	Tennis	ITF3 (Medium)	700	11	5

Tennis



Twickenham Stadium warm up area





Product	Product Code	Description	Use	Laboratory Testing	Pile Weight (g/m ²)	Pile Height (mm)	Guarantee Period (yrs)
Total Turf	TG65	A third generation, polyethylene surface consisting of two unique profiled fibres. The S shaped (4-ended monofilament) fibre ensures the surface's recovery whilst the C profile (4-ended monofilament) encapsulates the rubber infill. Part filled with rubber and sand.	Rugby Football Gaelic	RFU, IRB, FIFA 2 Star, FA, EN, GAA	1650	65	8
Rugby 65	ER65ES	A third generation surface featuring extra long soft polyethylene fibrillated fibres designed to split into blades. Part filled with rubber and sand.	Rugby	RFU, IRB, FA	1350	65	5

Rugby

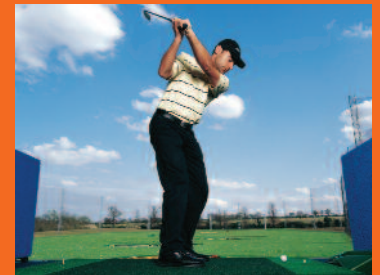


Cannock Hockey Club



Product	Product Code	Description	Use	Laboratory Testing	Pile Weight (g/m ²)	Pile Height (mm)	Guarantee Period (yrs)
WETT	WE	A dense, texturised, polyethylene monofilament with narrow blades designed to meet the highest level of performance standards, with reduced water application and no infill.	Hockey	FIH Global, EN	1600	13	10
Evolution	WD18	A sand dressed, dense, texturised, polyethylene monofilament with narrow blades. Evolution is a sand dressed version of WETT, that can be used for a variety of multi-use applications.	Hockey Recreational Football Tennis Netball	FIH National, EN, ITF5 (Fast)	1550	18	10
Reaction	HR20	A polypropylene, knit-de-knit surface that requires a sand dressing. Specifically designed for BSF funded projects.	Hockey Recreational Football Tennis Netball	FIH National, EN	1450	20	5

Hockey



TigerTurf at Mallorca Golf Club



Product	Product Code	Description	Use	Pile Weight (g/m ²)	Pile Height (mm)	Guarantee Period (yrs)
Golf Putt	WE	A dense, texturised, polyethylene monofilament with narrow blades. The shortest pile product in our golf range, Golf Putt is intended to be used on putting areas.	Golf	1600	13	10
Golf Green	GG24	A dense, texturised, polyethylene monofilament with narrow blades encasing a sand dressing. To be used on golf greens instead of natural grass for a low maintenance and high durability option.	Golf	3000	24	5
Golf 45	G45	A curly, two tone, polypropylene, monofilament, texturised surface, designed to be filled with sand. Designed for teeing off which is used for winter tees and driving ranges.	Golf	1850	45	5
Golf Tee	GT	An open, long pile, polypropylene, fibrillated surface designed to be filled with sand. The oldest golf product in our range but still a firm favourite with our customers for replacing natural grass or traditional nylon mats for teeing off areas.	Golf	1300	60	0

All product details listed in this publication were accurate at time of print. Due to the nature of the industry, on occasion TigerTurf may be forced to alter product specification or range in order to meet production or market requirements.

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