



# The development of dry (non-irrigated) hockey turfs

Progress report 04 – March 2024

## Introduction

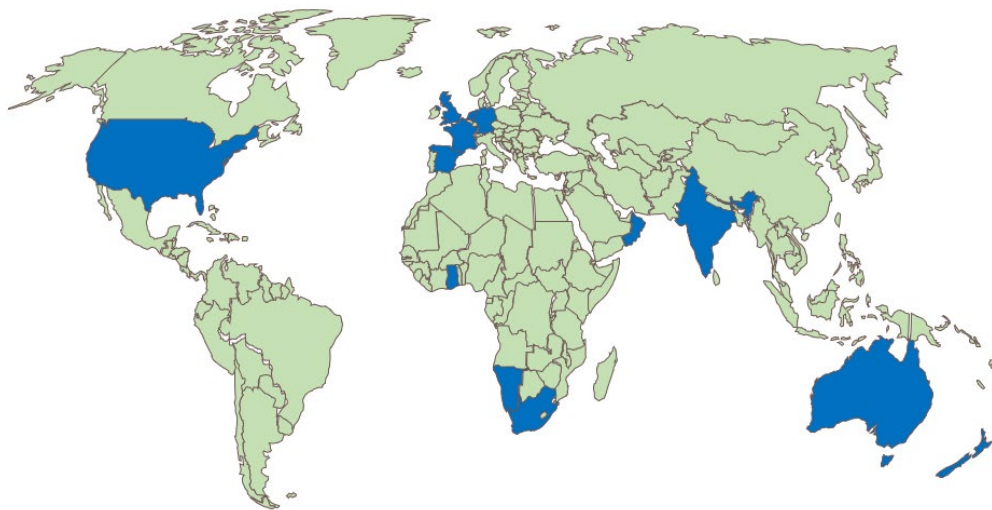
Hockey first embraced synthetic turf surfaces in the late 1970s and they have become the playing surface of choice for the sport. A range of synthetic turf surfaces are now used, with the majority using sand dressed, sand filled or multi-sport turf surfaces. At the higher levels of the sport, however, players have expressed a preference for playing on turfs that are watered prior to use; the watering providing fast, predictable, and consistent playing conditions that allows the players to perform to the best of their ability.

Watering a hockey field does, however, come at a cost, both financially and environmentally. Recognising this, the FIH started working with the synthetic turf industry in 2016 to develop surfaces that used less water and this has resulted in a reduction of around 70% from the typical watering needs of a decade ago. Whilst this reduction is significant, the surfaces still require some water, so the FIH has challenged the synthetic turf industry to develop hockey turfs that provide acceptable playing conditions for top-level hockey without watering.

- ✓ Conserving water to help protect the planet
- ✓ Cheaper fields – no need for expensive irrigation systems
- ✓ Improved carbon footprint – no water treatment or pumping to site
- ✓ Reduced operational costs

## The development of Dry Turfs

Companies have risen to the challenge with Dry (non-irrigated) Turfs now being available and the market response has been positive. Today, we are seeing an increasing number of club, community and education sector fields installing dedicated Dry Turfs or surfaces that incorporate dry turf technology and can be used with or without watering.



*Countries with Dry Turf fields already installed, or planned for 2024*

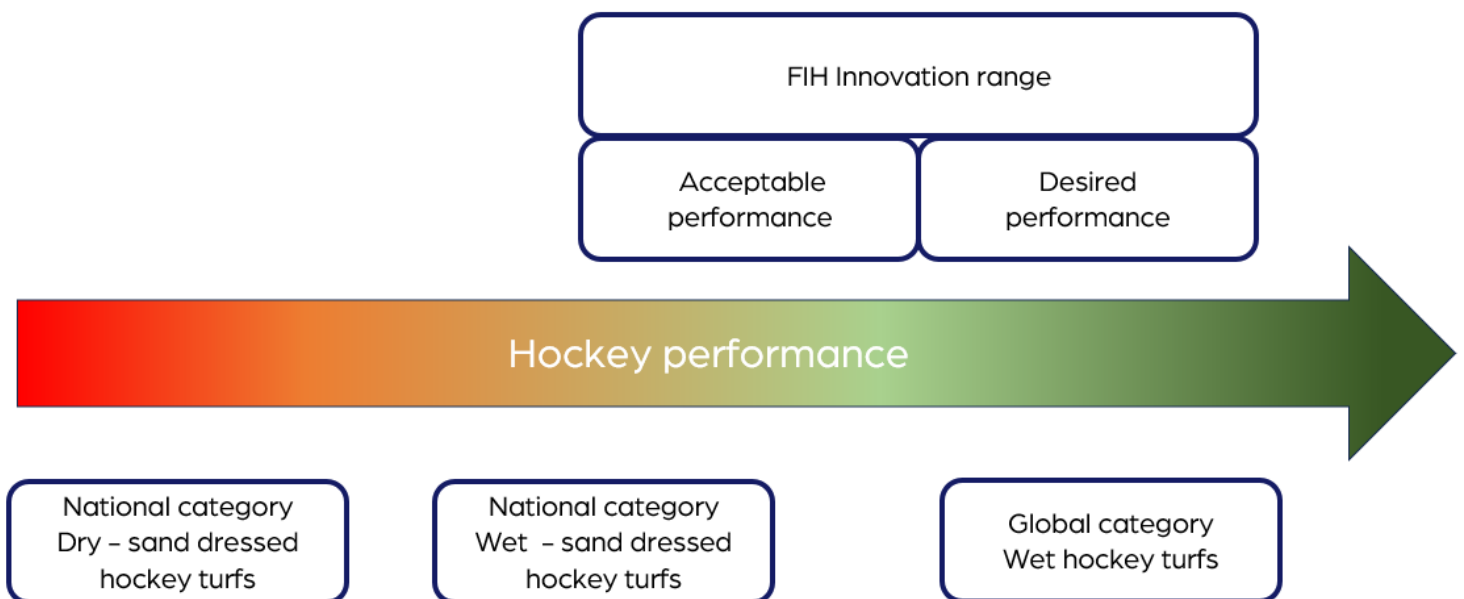
## FIH Innovation Standard

We all know that a new hockey field is a major investment and field owners want certainty that the surfaces they are installing will provide good and safe playing conditions that last for a realistic period of time. To provide this reassurance, the FIH has developed its *Hockey Turf and Field Standards*. These are now internationally recognised and most field owners now insist on having an FIH Approved Hockey Turf produced by a member of the FIH Quality Programme.

Our *Hockey Turf and Field Standards* Surfaces contain different categories of turf allowing field owners to pick the one best suited to the use of their field. For fields intended for top-level hockey, the Global category applies. At present this category requires the turf to be watered prior to play, as this ensures that the desired performance and player welfare properties are achieved. Moving away from insisting that this category of turf is watered means that the performance requirements for this category of surface need to be revised.

Based on research undertaken by the UK’s Loughborough University and specialist sports surface testing laboratory Labosport, the FIH, in May 2023, introduced an Innovation Category into our *Hockey Turf and Field Standards*. For the first time, using new test methods, we are able to assess those properties previously enhanced by water, including how the ball, stick and shoe interact with the surface. Being able to fully measure these properties allows us to benchmark wet turfs and set criteria for Dry Turfs. At present, the performance ranges are slightly wider than that measured on wet turfs, but it is hoped that the ranges can be tightened once we know exactly how the new types of hockey turf perform.

To assist manufacturers and consumers compare the performance of Dry Turfs to wet turfs, the Innovation Category also provides a sub-category based on results measured on Global category wet turf performance.





Since the launch of the Innovation Category, an increasing number of manufacturers are developing hockey turfs to satisfy the criteria and submitting their products for independent evaluation in the laboratory. Those that are found to satisfy the criteria are awarded the designation of being an FIH Approved Innovation Category Hockey Turf and are listed on our website at [FIH Approved Dry \(Non-Irrigated\) Hockey Turfs](#).

### What have we learnt so far?

As dry turf surfaces are being installed, the FIH is working with Loughborough University, national hockey associations and turf manufacturers to collect player feedback on how they consider these new surfaces to perform. Based on the feedback received so far we know:

- The desire to play hockey on surfaces that do not require watering is being welcomed by many. The FIH strategy complements the environmental and sustainability policies of many governmental, municipal and public bodies. The option to use Dry Turf surfaces is already resulting in increased investment in hockey facilities.
- Not all aspects of performance on Dry Turfs are identical to wet turfs, but players can, and are, adapting to these new types of surface. It is, however, important that players have adequate opportunities to train and play on these new surfaces before they are used at the highest levels of competition.
- The type of footwear used by players on Dry Turfs (in dry conditions), probably has to be different to the shoes used on wet turfs. Indoor hockey shoes, or other smooth soled sports shoes, seem to be best suited.
- Players are recognising that the use of protective undergarments is advisable if they wish to avoid injuries when sliding on the surfaces.
- The type of shockpad used beneath a Dry Turf is very important. With the removal of the water the performance impact of the shockpad on the ball/ surface and player/ surface interactions becomes much more significant.
- Without the ballasting weight of water or a sand dressing, Dry Turfs must be securely anchored to stop any thermal movement in warm conditions.

## Field certification

Responding to market requests, FIH have introduced a new category of field certification for fields that have Dry Turf surfaces. This category sits alongside the FIH Field Category 3 and is intended for fields used for national and local competitions.

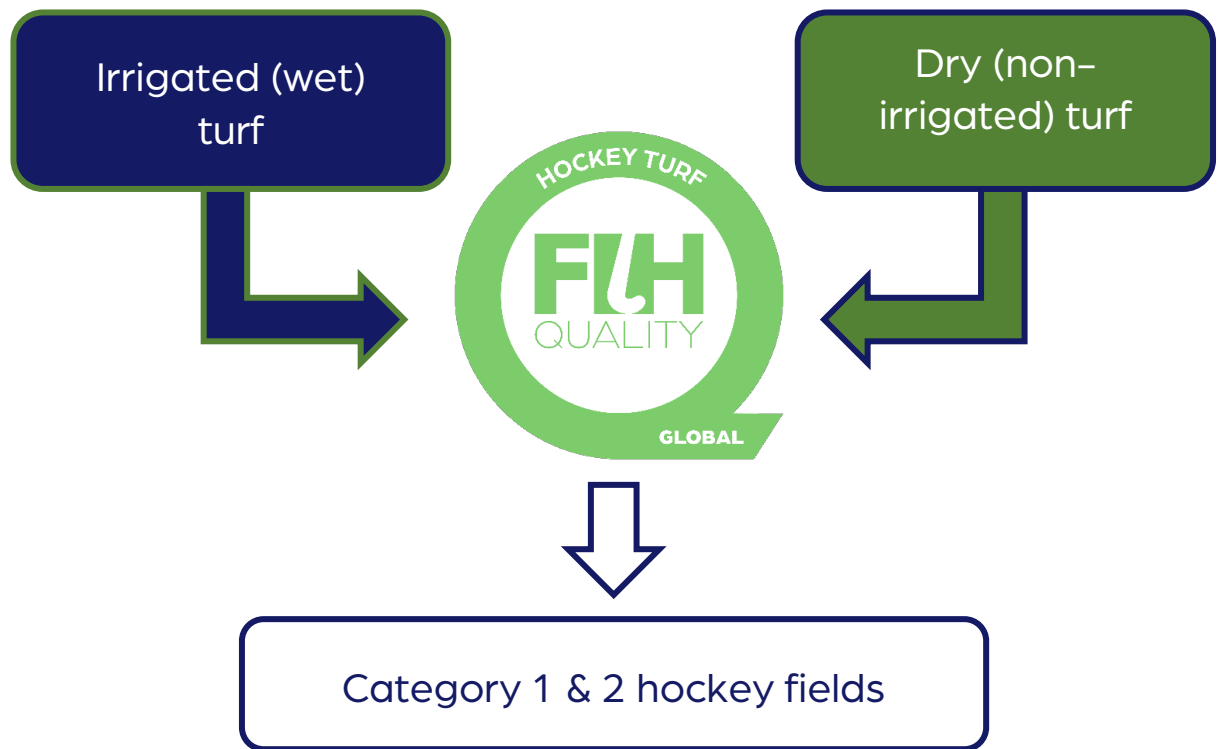


For a field to be certified it needs to:

- Be surfaced with an FIH approved Innovation Category Hockey Turf.
- Be tested under dry conditions.
- Comply with the criteria specified for FIH Innovation Category (non-irrigated) Hockey Turfs and FIH Category 3 hockey fields.

## What are the next steps?

As Dry Turf fields are built around the world we will seek player feedback on how they perform. Once the evidence shows the Dry Turf surfaces are able to provide acceptable performance for top-level hockey in all conditions in which hockey is played, we will remove our current requirement that Global category hockey turfs must be watered prior to play. This will then allow Dry Turf surfaces to be laid on Category 1 and 2 hockey fields, which are typically used for top-level international and national competitions. The first formal review of how Dry Turf surfaces are perceived and our performance criteria is planned for September 2024. If required, further reviews will be undertaken every six months thereafter.



What about the equipment used to play on Dry Turf surfaces?

In addition to the development of Dry Turf hockey surfaces, the sports equipment industry is rising to the challenge of aiding hockey to move to a more environmentally sustainable future. The 2024 Hockey5s World Cups, saw the use of a Dry Turf surface for the first time at a major international hockey tournament, but it also saw the debut of a self-wetting hockey ball. Designed to disperse a small quantity of water as it rolls across the surface, the ball was found to enhance the playing qualities of the Dry Turf.

The FIH is also engaging with the hockey equipment manufacturers to inform them about Dry Turf developments, and to encourage them to consider how the design of sticks, footwear and goalkeeper’s equipment can be adjusted to better suit the needs of these new types of playing surface.





Rue du Valentin 61

1004 Lausanne

Switzerland

[www.fih.hockey](http://www.fih.hockey)

[facilities@fi.hockey](mailto:facilities@fi.hockey)