

The FIH logo is positioned at the top left of the large blue ribbon graphic. It consists of the letters 'FIH' in a bold, sans-serif font, with 'FI' in red and 'H' in blue.

HOCKEY TURF & FIELD STANDARDS

Engineered
for Hockey



Part 5. Requirements for Temporary Overlay Pitches
Version 1

1 Introduction

The development of hockey turf over 40 years has had enormous positive effects on the playing of the game. Hockey is faster, more skilful and more exciting than ever before. However, hockey venues often don't match the non-stop magic of the game. They are often small, less spectator friendly, lacking in corporate facilities and ill-suited to television. In short, they limit the game from reaching its potential.

Therefore, the FIH is very excited and supportive of the development of temporary turfs that take hockey into larger, more appealing stadiums. The first example of this was at The Stoop Stadium (home of Harlequins Rugby Club) in London in 2019 where 12,000 fans watched GB v NZ in the FIH Pro League.



FIH is classifying this development as ‘Temporary Overlay Pitches’ (TOP).

TOP turfs provide a cost effective means of hosting top-level hockey in existing sports stadia and convention centres with all the benefits such venues bring to the athletes, spectators, media, broadcasters and event hosts and organising committees. These benefits are significant and must be matched by a playing surface that is suitable for elite level hockey. Therefore, two new categories of FIH certification have been developed for inclusion in the *FIH Hockey Turf and Field Standards* (HTFS). These are:

TOP 1	This category has similar performance characteristics to the FIH Global category for permanent installations. It is category is considered suitable for all types of hockey event.
TOP 2	This category has performance characteristics that permit slightly higher levels of shock absorbency, vertical deformation and ball rebound. It is considered suitable for fields that will be used for events that do not require teams to train and compete daily

for more than three consecutive days. Examples of such events are FIH Pro League games and Olympic Qualification matches.

Temporary Overlay Pitches may be used for 11 a-side hockey and Hockey 5s.

In developing these new categories, it has been recognised that the surface on which the TOP is laid will have a significant influence on the playing characteristics of the hockey field. Currently five configurations are envisaged:

- Overlaying natural grass, with the intention of not harming the grass so it can be used following the removal of the TOP;
- Laying on the rootzone of a natural grass field after the grass has been removed at the end of season;
- Laying over a long pile (3G) synthetic turf sports surface;
- Laying over a short pile synthetic turf field;
- Laying over an asphalt or concrete base.

2 Definitions

Temporary Overlay Pitches (TOP): a means of temporarily laying a hockey field over an underlying surface (e.g. natural grass, long pile synthetic turf etc).

Pitch base: the structure laid between the underlying surface and hockey-turf shockpad. This will often be some form of pitch protection panel.

Underlying surface: the surface on which the Top system is laid

Performance & field construction

Ideally the performance of a TOP should be the same as a permanently constructed field, but it is recognised that the characteristics of some of the bases on which a TOP will be laid make this difficult. Therefore, FIH have developed specific requirements for TOPs. These are detailed in the Table 1.

Table 1 - Performance Requirements		
FIH Field Category	Global TOP 1	Global TOP 2
Ball Rebound	100mm - 400mm	100mm - 420mm
Ball Rebound consistency between test positions	± 50 mm of overall mean	± 50 mm of overall mean
Ball Roll	≥ 10.0m	≥ 10.0m

Ball Roll consistency between test positions	$\leq \pm 2\text{m}$ of overall mean	$\leq \pm 2\text{m}$ of overall mean
Ball Roll Deviation	$\leq 0.50\text{m}$ @ 9.5m	$\leq 0.50\text{m}$ @ 9.5m
Shock Absorption	45% - 60% of overall mean	45% -70% of overall mean
Shock Absorption consistency (absolute)	$\leq \pm 5\%$ SA of overall mean	$\leq \pm 5\%$ SA
Vertical Deformation	4 mm – 9 mm	4 mm – 10 mm
Shoe – surface friction	25Nm – 45 Nm	25 Nm – 45 Nm
Shoe – surface friction consistency	$\leq \pm 5\text{Nm}$ of overall mean	$\leq \pm 5\text{Nm}$ of overall mean

3 Hockey turf and shockpads

The type of hockey-turf carpet used on a TOP shall be suitable for the category of competition to be played on the TOP. This will typically require a Global category hockey-turf.

As the hockey-turf carpet used on a TOP will often be transferred to a permanent hockey field after its use on the TOP, it should comply with the relevant performance, durability and material requirements of Part 2 of the *FIH Hockey Turf and Field Standards*¹ (HTFS).

If the shockpad used within a TOP is also intended to be reused for several events or be transferred to a permanent hockey field, it should comply with Clause 8.7 of Part 2 of the HTFS.

4 System approval

For a TOP to be approved it must be supplied by an FIH Preferred Supplier or Certified Manufacturer and meet the requirements of this Standard.

It is recognised that the normal product approval and field certification procedures of the *FIH Hockey Turf and Field Standards* cannot easily be applied to TOPs. Therefore, the FIH have developed specific procedures designed to ensure that any TOP system will provide a satisfactory playing surface. These comprise two stages:

Stage 1

A trial area of the proposed TOP construction should be constructed on the surface for which the TOP has been designed to be laid. The trial area should be large enough for players to train and play on it (typically an area measuring at least 50m x 30m). The installation and set up of the trial area (including watering of the hockey-turf) should replicate the installation of a full field.

A player assessment trial must be held on the trial area. This shall be undertaken by a minimum of ten male and ten female adult international squad players from a country in the top 10 of the FIH World Rankings. Typically, each group will undertake 5 on 5 training games and also a series of coordinated training activities, of a format agreed in advance by the FIH, for a minimum of one hour.

¹ Available at www.fih.ch/facilities

The activities being repeated on two separate occasions (normally consecutive days). Immediately following the training activities, the players should complete player assessment feedback forms provided by the FIH. These should be completed under the supervision of the FIH or an independent witness agreed in advance by the FIH.

The trial area should also be tested in accordance with sports performance and construction requirements of this Standard using the test methods specified in HTFS Part 3 by an FIH Accredited Test Institute.

Following the tests, the results should be submitted to the FIH (facilities@fih.ch) for review. Any system considered by the FIH to provide acceptable performance will be registered as being provisionally approved as a TOP Hockey-Turf System.

Stage 2

Following the construction of the first full size TOP field it must be tested by an FIH Accredited Test Institute to demonstrate compliance with this Standard. The tests should be undertaken following the testing procedures specified in FIH HTFS Part 3.

Assuming the field is shown to be fully compliant with the requirements of this Standard the TOP's approval will be confirmed.

5 Information to be provided to FIH when applying for a TOP system approval

When applying for a TOP system to be placed on the FIH list of Approved TOP Systems, the FIH Preferred Supplier or Certified Manufacturer shall provide the following information:

1. Name and specification of the hockey-turf carpet
2. Name, manufacturer and product code of the shockpad
3. Name, manufacturer and product code of the temporary base system
4. Irrigation requirements (in l/m²) of the hockey-turf surface
5. Details of the method of joining the hockey-turf carpet rolls
6. Details of the method(s) of line marking the hockey-turf

To ensure acceptable performance is achieved whenever a TOP is laid the FIH Preferred Supplier or Certified Manufacturer shall also provide to the FIH requirements for the underlying surface(s) on which their TOP may be laid (subject to individual site inspections). This shall include:

- Surface type
- Range of acceptable slopes and profiles of the underlying surface
- Minimum acceptable firmness or stiffness (e.g. LWD, Clegg Impact Hammer or Advanced Artificial Athlete values) of the underlying surface
- Water permeability rates for the underlying surface

All information supplied to the FIH will be treated in commercial confidence. Any changes to the configuration of the TOP system must be notified in writing to the FIH.

6 Use of an approved TOP on alternative underlying surfaces

A TOP system comprises the hockey-turf carpet, shockpad, temporary base system and underlying surface (natural grass, root zone etc). If the manufacturer wishes to use the TOP system on another underlying surface it must also be assessed following the principles described in this Standard; with the precise assessment and testing requirements being agreed with the FIH.

7 Field Requirements

Subject to any competition specific requirements TOPs shall comply with the layout requirements detailed in Table 2 and the installation standards detailed in Table 3.

Table 2 - Field layout requirements

Minimum Run-off sizes	Ends of field	5.0m	Run-offs shall be surfaced with the same hockey-turf as the field of play
	Sides of field	3.0m	
Operational zone (this may be at a different level to the TOP)	1m wide on each boundary. This may be at a different level to the TOP		
Type of Hockey Turf	As required by the competition requirements. This will normally be a Global category surface in accordance with FIH HTFS, Part 2, Clause 3		
Colour of FOP	Unless otherwise agreed with the FIH, Signal Blue or other approved shades of blue		
Colour of Run-Offs			
Colour of Line Marking	White		
5m broken lines outside shooting circles	Required		
Accuracy of Line Markings	In accordance with FIH HTFS, Part 3, Clause 4.3.4		
Other line marking within the FOP	None		
FIH Quality Programme logo within run-off	Optional		
Logos within the FOP	Dependent on competition commercial rights		

Table 3 - Installation standards

Surface Regularity	When assessed with a 3m straightedge and graduated wedge the maximum undulation should be 6mm. Up to 15 deviations (for full size pitches pro-rata for smaller areas) are permissible providing no deviation is greater than 10mm, is not located in either shooting circle, does not form a potential hazard to players or
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	<p>detract from the playing experience. Any undulations greater than 1m in length to be considered multiple deviations of 1m intervals.</p> <p>When assessed with a 300mm straightedge and graduated wedge the maximum undulation anywhere on the Field of Play should be 2mm.</p>
Field drainage	<p>The design of the TOP and the base on which it is to be laid at each venue shall ensure that no water is standing on the playing surface 5 minutes after watering / heavy rain ceases.</p> <p>The drainage system of the underlying surface shall also ensure the stability of the TOP base is not compromised for the duration of the event.</p> <p>Surface drainage shall be designed to ensure irrigated fields remain uniformly wet (i.e. pronounced slopes should not result in a field drying on the high side and become saturated on the low side)</p>
Field orientation	<p>North / South, with a maximum deviation from north of no more than $\pm 15^{\circ}$, unless agreed in advance with FIH²</p>
Field gradients / profile	<p>In accordance with the recommendations of the TOP supplier and as required to ensure compliance with the ball roll, irrigation and drainage requirements of this Standard.</p> <p>Where possible the profile should be symmetrical around the central axis of the field².</p>
Joining hockey-turf rolls	<p>In accordance with FIH HTFS, Part 3, Clause 4.6</p>
Tensioning hockey-turf	<p>The synthetic turf carpet shall be adequately tensioned and restrained to ensure that thermal or dimensional movement of the carpet does not occur throughout the event.</p>
Player and emergency vehicle access points	<p>Suitable tapered transitions between the FoP and surrounds shall be provided at all access points</p>
Field irrigation	<p>The proposed method of irrigating the hockey-turf at each venue shall be agreed in advance with the FIH</p> <p>It shall ensure the field of play and run-offs are adequately and evenly irrigated in accordance the requirements of the specific hockey-turf.</p> <p>If manual watering of a field is being proposed this shall be agreed with the FIH in advance of the event.</p>

² If a venue does not comply with this requirement an application may be made to the FIH to see if dispensation can be granted.

7 Field installation checks

As many TOPs are likely to be installed, used and removed in a short period of time, and possibly repeatedly through a playing season it is recognised that a traditional FIH field test will not always be feasible or cost effective. Therefore, one of two field verification procedures are permitted, the precise requirements being specified in the Competition or Event Rules.

Option 1 - FIH Field test

If required, the TOP should be tested following installation, in accordance with the field test requirements of FIH HTFS, Part 3 i.e. a normal field test.

Option 2 – installation verification checks

If a formal field test is not required, the following checks must be made whenever a TOP is installed:

- Verification the underlying surface has acceptable firmness or stiffness (e.g. measurements with an LWD or Clegg Impact Hammer, etc.) and Surface Regularity.
- Surface Regularity and stability check of the of the temporary pitch base system prior to the installation of the shockpad and hockey-turf
- Quality and integrity of carpet joints

Subject to FIH agreement, these checks may be made by an FIH Preferred Supplier or FIH Certified Field Builder, enabling self-certification, providing they are witnessed by a nominated representative of the event organising committee and a signed statement of conformity (as detailed in Appendix A) is provided to the Technical Delegate at the event at least 12 hours prior to training or play commencing, with a copy being sent to the FIH at facilities@fih.ch.

Failure to undertake the installation checks, or failure to comply with the relevant requirements of this Standard may result in the TOP being removed from the list of approved TOPs.

The FIH also reserve the right to stipulate a TOP has a full field test at any time, the cost of the test being met by the FIH Preferred Supplier/ FIH Certified Manufacturer or Event Organising Committee.

Appendix A - Field installation checks – statement of conformity

We^a.....

Confirm that the Temporary Overlay Pitch installed at^b.....

For^c.....

Has been installed in accordance with *FIH Hockey Turf and Field Standards. Part 5. Requirements for Temporary Overlay Pitches* and our method statements and procedures submitted to the FIH when the TOP was submitted for approval.

We further confirm that the following checks have been made during the build-up of the TOP and that:

- the underlying surface meets our requirements, for has acceptable firmness or stiffness surface regularity and profile;
- the surface regularity and stability of the temporary pitch base system are within the tolerances specified by the FIH and suitable for the installation of the shockpad and hockey-turf
- the quality and integrity of carpet joints are within the tolerances specified by the FIH
- the method of irrigating the TOP is in accordance with the needs of the hockey-turf surface and FIH standards.

The installation checks were witnessed by^d.....

position at event^e.....

Signed^f..... Title^g.....

Date..... /...../20.....

^a insert name of FIH Preferred Supplier or FIH Certified Field Builder

^b TOP location

^c Name of event or competition

^d Name of nominated representative of the event organising committee that witness the installation checks

^e Role nominated representative

^f Name of person signing the Statement of Conformity

^g Company position of person signing the statement of conformity