

# International Hockey Federation

April 2007



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synthetic turf  
... yesterday  
... today  
... tomorrow

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# Turf - history



- 1970/1: Empire Stadium, Vancouver
- "the autumn 1970 rains transformed an acceptable playing surface into a magnificent hockey pitch"
- 1976: Montreal Olympics: played on synthetic turf
- ... and all major competitions since
- ... standards developed later ... 1986

# Turf - standards



- standards for elite (“global”) pitches specified an unfilled turf
- ie, standards assumed a water-dressed turf
- ... players expect a water-dressed turf
- ... because of its playing characteristics
- ... especially ball movement, shoe grip, personal comfort (eg falling, sliding)



# Turf - standards



- impact response - berlin athlete/ISA sports floor tester
- pile/pad deformation - berlin athlete/ISA sports floor tester
- colour - "green" - methuen handbook
- gloss - glossmeter
- porosity - BS 7044
- ball rebound - height and deviation from average
- ball roll - distance and deviation from straight
- ball-to-surface friction - roll on a sloping surface
- underfoot friction - modified leroux apparatus

# Turf - standards



- ... do not **fully** represent the **dynamics** of play
- ... do not **fully** reflect player **comfort** (eg falling, sliding)
- ball rebound - height and deviation from average
- ball roll - distance and deviation from straight
- ball-to-surface friction - roll on a sloping surface
- underfoot friction - modified leroux apparatus

# Turf - standards



- ... do not **fully** represent the **dynamics** of play
- ... do not **fully** reflect player **comfort** (eg falling, sliding)



# Turf - the future



- require a turf which is not water-dependent - "water-free"
- ... for environmental and cost reasons





# Turf - research



- the dynamics of playing the game
- ball-pace (a combination of speed, rotation and slide)
- ball-surface friction
- ... dribbling skills ... slower movements of the ball
- ball-movement ("hawkeye")
- ... hitting the ball

hockey  
specific

# Turf - research



- the dynamics of playing the game
- the comfort of players
- ... running ... turning
- ... falling ... sliding
- shoe-turf interaction
- body-turf interaction

# Turf - research



- ... standards from other sports ?
- ... existing research ?
  - stud slide/deceleration (FIFA 7)
  - skin/surface friction (FIFA 8)
  - skin abrasion (FIFA 9)
- shoe-turf interaction
- body-turf interaction

# yesterday, today, tomorrow



- **most sports** ... need to persuade players to accept synthetic turf
- **hockey** ... synthetic turf is accepted ... **expected**
- ... deliver expectations with new turf types ... **water-free** ...
- ... in cooperation with the industry and the game ...
- ... based on **performance** standards ...



# yesterday, today, tomorrow



- ... deliver expectations with new turf types ... **water-free** ...
- ... in cooperation with the industry and the game ...
- ... based on **performance standards** ...

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?? comments ??

?? advice ??

?? questions ??

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