Challenges for the development of criteria for synthetic turf for Australian football and cricket

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Water Restrictions – STAGE 4

All outside watering is **banned**. No watering at any time, by any means.

- **Residential and Commercial Gardens and Lawns**
- **Public Gardens and Lawns**
- **Sporting Grounds**
- **Paving, concrete and other hard surfaces** (except for emergency; or for health or safety hazard)
- **Vehicles**
- **Residential or Commercial Pools and Spas**

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In November 2009 for 5 Months….

- Councils and community groups will be able to apply for water from a 500ML allocation for shared public assets such as parks, sports fields and bowling greens

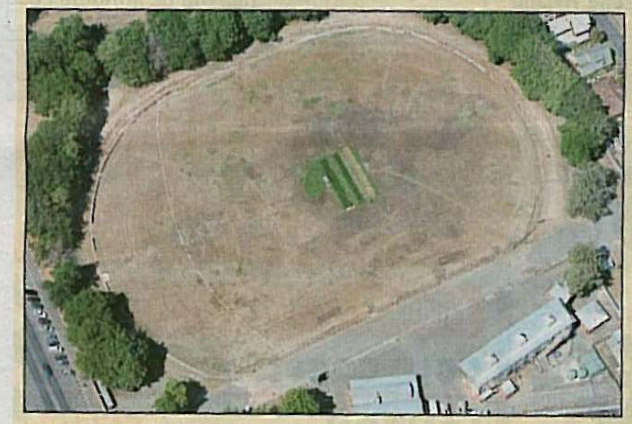
Ballarat Football Ovals 1 month before the 2007 season

AERIAL VIEWS OF BALLARAT'S MAIN GROUNDS

WENDOUREE RESERVE: Lake Wendouree Lakers. Watering: no. Ready for 2007 football: no. Extra measures: water tanks. 060107LB7A

AUSTAR ARENA: North Ballarat. Watering: yes. Ready for 2007 football: yes. Extra measures: $50,000 grant for water tanks and pump. 060107LB7B

EASTERN OVAL: East Point Kangaroos. Watering: yes. Ready for football: yes. Extra measures: bore water is pumped into tanks holding 115,000 litres. 060107LB7C



CITY OVAL: Redan Lions. Watering: only turf wicket. Ready for football: no. Extra measures: water tank. 060107LB7D

ALFREDTON OVAL: Ballarat Swans. Watering: no. Ready for football: no. Extra measures: two water tanks and access to private dam water. 060107LB7E

MARTY BUSCH RESERVE: Sebastopol Kookaburras. Watering: no. Ready for 2007 football: no. Extra measures: water tank. 060107LB7F

- Project commissioned by AFL Community Development to develop criteria for using artificial turf for community level Australian football and cricket

- Funded by AFL, Cricket Australia, JLT Trustees, Sport & Recreation Victoria

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Sports using Synthetic Turf

Challenges in Australia

The majority of Australian football ovals are used for cricket during the football off season

Therefore characteristics of both games on natural turf had to be duly considered

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Differences in surfaces for Australian football & cricket

At Elite level

The grass is cut daily in summer and twice a week in the winter. It is cut at a length of 12mm during the summer and 25mm during the winter.

At community level

15mm in summer and up to 50mm in winter. Mowing depends on rainfall and growth.

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LIONS
23
26

TOYOTA

DELTA

Development of Criteria

- **Surface Characteristics**

e.g. traction, shock absorbency, friction, abrasion, critical fall height

- **Ball Interactions**

e.g. roll, vertical bounce, angled ball bounce

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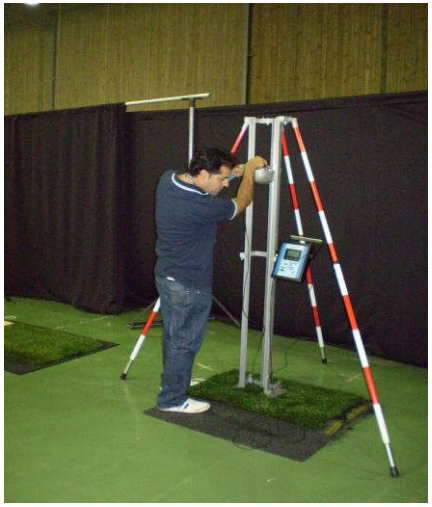
Surface Characteristics

Critical Fall Height



Criteria
1.2m

Hardness

Criteria
65-120g

Abrasion/Friction

Criteria
<50% Change in Friction Force

Coefficient of Friction
0.35 – 0.75

Traction

Rotational Traction

CRITERIA

Traction Football Studs	25Nm - 50Nm
Traction Cricket Studs	7Nm - 15Nm
Traction Cricket Spikes	15Nm - 25Nm

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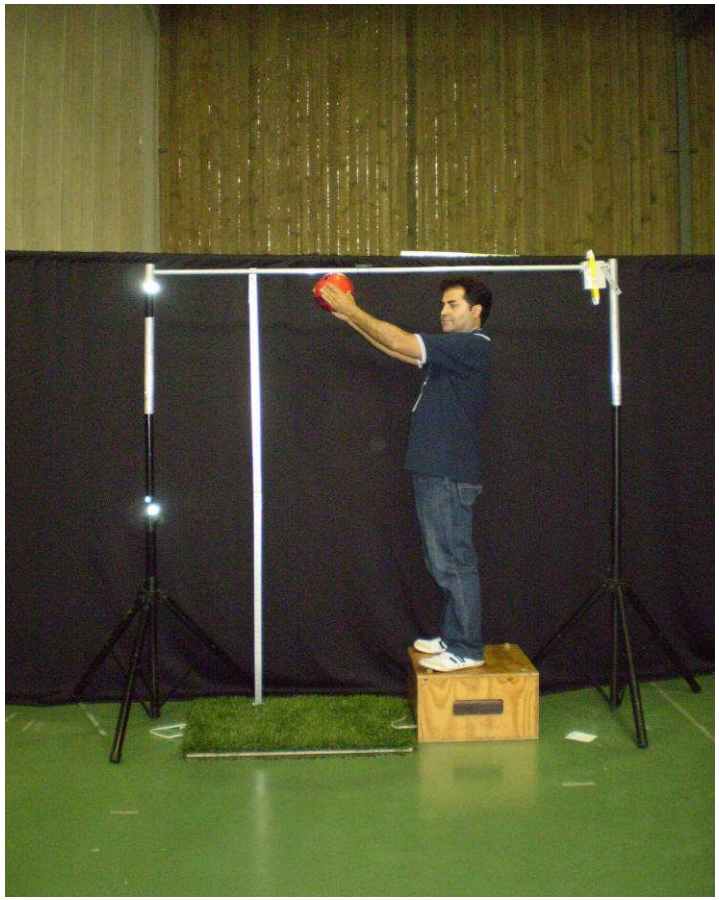
Ball Interactions

Vertical Ball Rebound



Main Finding

Shock pads were a critical contributor to this result.

CRITERIA

Football:0.6 –1.0m

Cricket: 0.1 – 0.4m

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Ball Roll

Main Finding

- Level of infill very important for consistency.
- Cricket ball slows down – implications for boundary placement

CRITERIA

Football:12m

Cricket: 15m

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Angled Ball Rebound

Main Finding

The release of infill as the ball interacted with the surface was a major contributor to the result

CRITERIA

Football:45% - 70%

Cricket: 35% - 60%

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Player Interactions

Heat

Location	Weather	Air Temp (° C)	Surface Temp (° C)
MCG (Grass)	Sunny	28.7	39.6
Telstra Dome (Grass)	Sunny	25.0	36.1
Buninyong Oval (Grass)	Overcast	16.4	16.8
Telstra Dome (Artificial)	Sunny	26.6	34.5
Skilled Stadium (Artificial)	Sunny	38.6	63.0
Geelong Baseball (Artificial)	Overcast	20.9	22.2
Geelong Baseball (Artificial)	Sunny (3pm) No wind	42.1	72.7
Geelong Baseball (Artificial)	Sunny (4.30pm) Windy	35.7	58.6
Geelong School (Artificial)	Sunny	30.2	63.0

Conclusions

- This research highlighted the important factors that need to be optimised for synthetic playing fields to be to be safe and suitable for use, particularly multisport.

- This criteria has now been accepted by the Australian Football League and Cricket Australia and the first synthetic surfaces for Australian football and cricket at community level has been announced.

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Acknowledgements

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