



Test methods and performance standards for sports surfaces – an overview

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Why do we need to be able to test sports surfaces?

- To control the way the game is played
- To provide a safe playing environment
- To ensure adequate durability
- To provide reassurance to players
- To allow consumers to compare surfaces objectively
- To aid product development

Who develops standards?

- International sports governing bodies
- National sports governing bodies
- National / International standards bodies
(ASTM, BSI, DIN, CEN etc,)
- Trade associations (SAPCA, STC etc)

Current international governing body standards

1986	FIH	hockey
1990	IAAF	track & field
1995	WBB	bowls
1997	ITF	tennis
2001	FIFA	football
2002	UEFA	soccer
2003	IRB	rugby
2005	FIFA – UEFA	football

National standards

EN 14904	Indoor surfaces for multi-sports use
EN 14877	Synthetic surfaces for outdoor sports areas
EN 15303-1	Synthetic turf surfaces intended primarily for outdoor use
ASTM 1936 -98	Shock-Absorbing Properties of North American Football Field Playing Systems as Measured in the Field

Ball - surface interaction

- Ball rebound
- Angle ball rebound
- Ball roll
- Pace
- Spin

Player - surface interaction

- Shock absorption
- Deformation
- Head Injury Criterion
- Gmax
- Friction
- Traction
- Skin friction/abrasion

Durability

- Wear resistance
- Artificial weathering
- Simulated wear
- Environmental impact
- Joint strength

What is missing?

- Spin (cricket & tennis)
- Slide (tennis)
- Linear friction (football, hockey, rugby)
- Surface pace – football
- Energy restitution (all sports)

Criteria for new tests

- Fully described specifications
- Reproducible
- Repeatable
- Ideally suitable for use in lab and site
- Commercially viable