



S T A N D A R D S

Performance & Uniformity Rating  
Sport Specific Standards



[www.maplefloor.org](http://www.maplefloor.org)

**MFMA's PUR Standards focus on shock absorption, vertical deflection, area of deflection, ball bounce and surface friction. These standards have been designed, utilizing exacting testing methodologies, to ensure that customers receive a reliable, well-performing, competitive sports surface.**



## MFMA PUR Standards – Performance & Uniformity Rating Sport Specific Standards

Since 1897, members of MFMA have been dedicated to producing the highest quality northern hard maple flooring and sports flooring systems in the world. Through consistent enforcement of strict manufacturing, grading, packaging, shipping and installation, MFMA has become synonymous with quality.

Within the last 20 years, there has been a movement within the industry to quantify performance characteristics that best define “a good sports floor.” As a result, our industry has hundreds of different sports flooring systems, each with varying levels of performance. Within this range of system options, there are some common performance characteristics the industry has recognized as being most desired and important.

MFMA's PUR Standards focus on shock absorption, vertical deflection, area of deflection, ball bounce and surface friction. These standards have been designed, utilizing exacting testing methodologies, to ensure that customers receive a reliable, well-performing, competitive sports surface.

No one knows more about how a floor should perform and how it should be installed than MFMA members. As an organization representing the worldwide sports flooring industry, our goal is to balance technical standards with practical flooring system design to create uniform standards of performance for competition sports floors.

When a specific flooring system is a MFMA PUR Compliant floor, it is tested on a strict pass/fail evaluation. MFMA will only allow the use of the term “compliant” as it pertains to PUR testing; either a floor is compliant and passes the standards or it does not.

For additional information on MFMA testing procedures, contact MFMA Headquarters or any of the MFMA Mill Manufacturing members on their system(s) that have been tested in accordance with the MFMA PUR Standards.



## Shock Absorption

**ASTM F2569-11 (2019)**

Measures the flooring system's ability to absorb impact forces generated by the athlete.



## Vertical Deflection

**ASTM F3248-17**

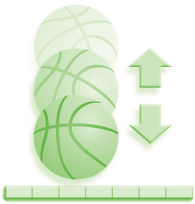
Measures the floor system's downward movement during the impact of an athlete landing on the surface.



## Area of Deflection

**ASTM F3248-17**

Measures the floor system's ability to contain the deflected area under an athlete's impact, measured at 20" (500 mm) from the point of impact.



## Basketball Rebound

**ASTM F2117-10**

Measures the basketball's rebound response off the sports floor system as compared to the ball's rebound response off concrete.



## Surface Friction

**ASTM D2047**

Measures an athletic flooring finish's ability to control the sliding of athletes on a sports surface.



The MFMA PUR Standards utilize ASTM Test Standards.  
For additional information on MFMA testing procedures,  
contact MFMA Headquarters.

## Different Standards For Different Sports

We want nothing to get in the way of the athletes performing at the pinnacle of their abilities. The PUR Standards identify the performance standards and their optimal performance levels that matter the most for each activity. Playing basketball on an aerobics floor will affect the performance of the athlete. The increased shock absorption can lead to fatigue much quicker than playing on a floor where the ideal shock absorption is designed for basketball. The opposite is true if you are doing aerobics on a portable floor system. The reduced shock absorption could lead the aerobics instructor to end the class early from soreness in the knees and ankles.

## Test Methods

For information on the MFMA PUR Standards testing methodologies, visit [www.maplefloor.org](http://www.maplefloor.org)

### Performance

Performance Requirements	Shock Absorption	Area of Deflection	Basketball Rebound	Vertical Deflection	Surface Friction
Basketball	50% minimum average	20% maximum average	93% minimum average	2.3 mm minimum average	0.6 minimum
Portable	40% minimum average	N/A	95% minimum average	1.5 mm minimum average	0.6 minimum
Aerobics	65% minimum average	25% maximum average	N/A	2.3 mm minimum average	0.6 minimum
Dance	55% minimum average	25% maximum average	N/A	2.3 mm minimum average	*
Volleyball	55% minimum average	20% maximum average	N/A	2.3 mm minimum average	0.6 minimum
Squash	55% minimum average	20% maximum average	N/A	1.5 mm minimum average	*
Racquetball	55% minimum average	20% maximum average	N/A	1.5 mm minimum average	*
Handball	55% minimum average	20% maximum average	N/A	1.5 mm minimum average	*

\* surface friction standard was not set as it is dictated by the type of activity performed

### Uniformity

Uniformity Requirements	Basketball	Portable	Aerobics	Dance	Volleyball	Squash	Racquetball	Handball
Shock Absorption	+/- 5%	+/- 5%	+/- 5%	+/- 5%	+/- 5%	+/- 5%	+/- 5%	+/- 5%
Vertical Deflection	+/- 0.5 mm	+/- 0.7 mm	+/- 0.6 mm	+/- 0.6 mm	+/- 0.6 mm	+/- 0.6 mm	+/- 0.6 mm	+/- 0.6 mm
Area of Deflection	< 20%	N/A	< 30%	< 25%	< 25%	< 25%	< 25%	< 25%
Basketball Rebound	+/- 3%	+/- 3%	N/A	N/A	N/A	N/A	N/A	N/A



**Disclaimer:** MFMA PUR Standards are designed to provide general performance, uniformity and playability information to architects, specifiers and consumers. MFMA, its members, officers and agents disclaim responsibility for applicability of these standards under all circumstances.

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