



ASTM F2772

FOUR CRITERIA FOR A SAFE AND EFFICIENT SPORTS SURFACE

UNDERSTAND ASTM F2772

ASTM International developed in 2009 a standard specific to sports surfaces with special consideration for the North American market: the ASTM F2772 standard. It assesses four factors that together will determine whether the surface is well suited to the core activities of your facility.



From the first school years, young people discover team sports in the gymnasium. Their only goal is to have fun, while as they get older some may want to perform in a specific sport and will reach higher levels.

Are these young athletes aware of the safety level of the gymnasium in which they play their sport? Not necessarily, but coaches, physical education

teachers, equipment managers and installers like MSS SPORTS team know that safety is vital.

Choosing a top quality sports or multi-use floor for your facility is crucial for allowing athletes to perform and have fun on a safe surface.



THE FOUR ASTM F2772 CRITERIA

Measures the rebound factor of the basketball on the floor system compared to its rebound on concrete.

P.06



Measures the surface's ability to absorb the impact force of the athlete playing on the surface.

P.03

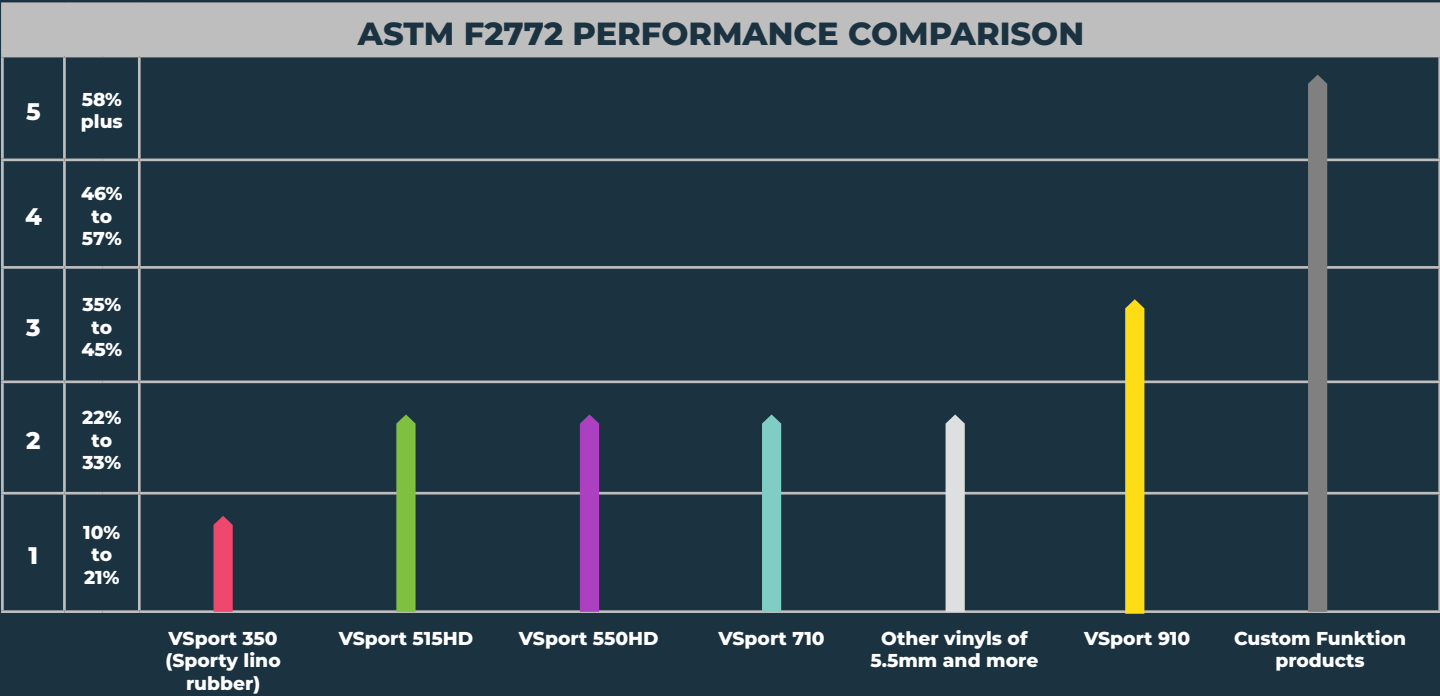
Measures the ability of the flooring to control athlete sliding on its sports surface.

P.05



Measures the ability of the pavement to deform under a load such as an athlete's fall or a jump.

P.04





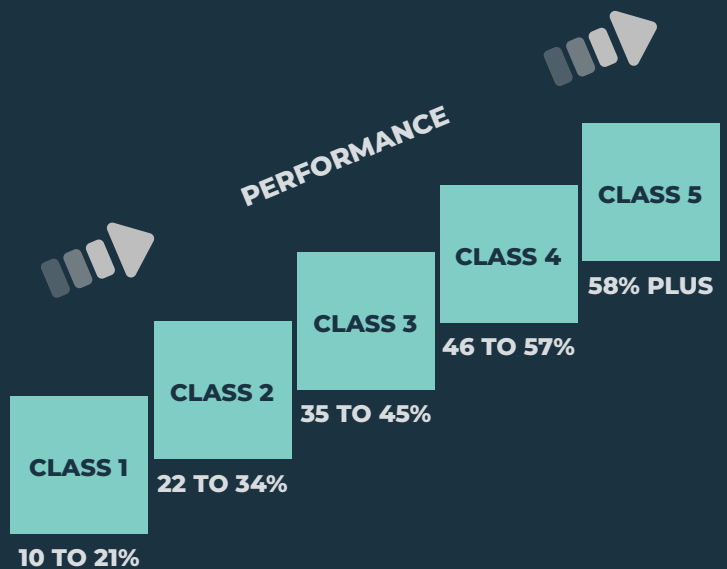
SHOCK ABSORPTION

Measures the surface's ability to absorb the impact force of the athlete playing on the surface.



A quality floor with a superior level of shock absorption will reduce the rate of joint injuries that athletes can develop over time. This type of injury, often related to overuse or too hard surface, is among the most common. High performance athletes who run, jump, change direction quickly and pivot will appreciate a surface that absorbs better and it will also be highly preferable for growing young athletes.

While a quality flooring system cannot prevent accidental injury, it will reduce the force of impact during falls and limit the chances of chronic injury as well as the severity of some accidents.





VERTICAL DEFORMATION

Measures the ability of the pavement to deform under a load such as an athlete's fall or a jump.



This criterion measures the amount of give of the surface which means the ability of the floor to adjust vertically as an athlete jumps or falls on the court. Too much vertical deformation is not ideal for high performance athletes as the floor will absorb their running energy and can feel like running in sand, which will tire the athlete. On the other hand, not enough vertical deformation is harder and could lead to injuries.

The desired amount of give will really depend on the purpose of the facility





SURFACE FRICTION

Measures the ability of the flooring to control athlete sliding on its sports surface.



Another major cause of injury is slipping on a surface when the surface does not have enough traction. Athletes playing basketball or tennis for example change direction quickly and they need to be able to do their movements easily on a surface that provides good traction. Conversely,

a surface that is too adherent will have an effect of blocking some movements and can be dangerous, hence the importance of selecting a quality floor that meets the ASTM F2772 standard with a sliding coefficient between 80 and 110. This standard ensures that there is a good balance between sliding and traction. For example, a volleyball player will prefer a VSPORT floor with less friction so they can glide towards the ball and kneel down while a Basket Ball

player will prefer a more grippy floor like MSSFLEX.

However, no matter what surface you choose, daily maintenance is essential to avoid slipping on the floor and getting injured. A slight dust accumulation can make a surface unsafe and even lose your standards.

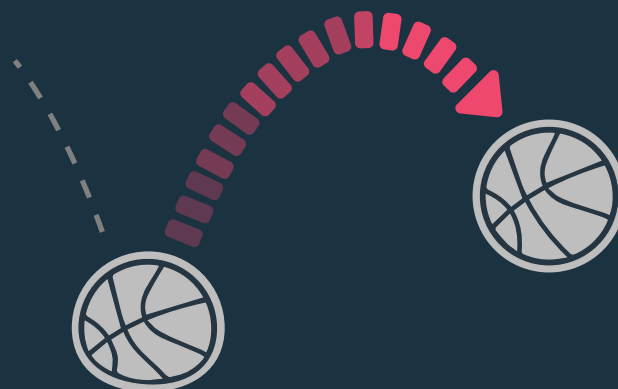


BALL REBOUND

Measures the rebound factor of the basketball on the floor system compared to its rebound on concrete.



The last criterion of the standard is the ball rebound. It is mainly related to the practice of basketball and determines the ball's behavior when dribbling for ideal playability. No matter where the player is on the court, he needs to be confident that the ball bounce will be the same everywhere. Rebound must be precise and uniform to allow athletes to perform with a minimum percentage of 90% compared to the rebound on concrete.





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EXPERTS ARE THERE TO HELP!

Combined to a proper training routine, post-workout stretching, good footwear and careful maintenance of the surface, the choice of sports flooring is an integral part of the winning formula!

Funktion offers a range of surfaces for all sports and multi-purpose activities with the VSPORT range of vinyl systems.

For more details on Funktion's VSPORT products, contact your distributor.



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ASTM F970

UNDERSTANDING INDENTATION AND STATIC LOAD LIMIT TESTING

UNDERSTANDING INDENTATION AND STATIC LOAD LIMIT TESTING

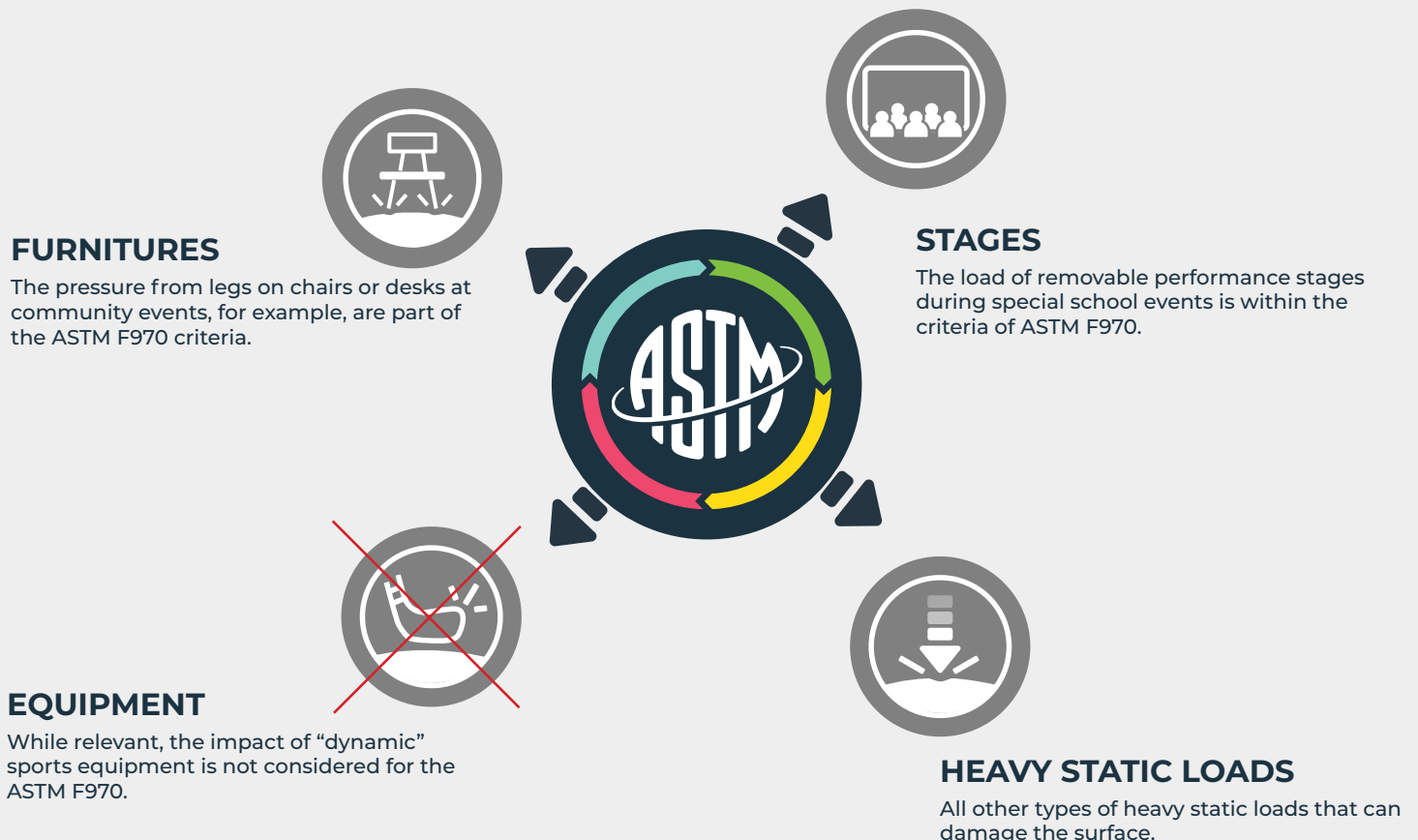
In sports flooring industry, some manufacturers claim extremely high static load limits (PSI) for their products, which can lead the market to believe that they are of higher quality and better protected against indentation. It is therefore important to understand the static load limit testing.

Indentation is the mark or the inward curve left on a surface by a localized pressure. The level of resistance to static load limit must comply with specific standards to avoid this indentation which generally refers to ASTM Test Method F970, titled Standard Test Method for Static Load Limit. This

method consists of applying a static charge, under determined conditions, to the surface of the material in order to observe and measure the ability of the flooring product to withstand or recover from indentation.

SOME EXAMPLES OF STATIC LOADS

Static load limit tests are performed on the product not installed. The results on the installed coating may differ and does not take into account dynamic loads. For example, a person walking with pointed heels does not represent a static charge since it is movement.



HERE'S HOW IT WORKS

This method requires a standard test load in pounds per square inch (PSI), depending on the type of flooring. This charge is applied for 24 hours to an uninstalled product piece. The sample is then left to stand for another 24 hours after which the depth of the indentation created by the load is then measured. To pass the ASTM F970 test, the value must be less than 0.5 mm after 24 hours of rest.



DURATION



**UNIT OF
MEASURE**

(Thousandths of an inch)



**ACCEPTABLE
MEASUREMENTS**



IMPORTANT



The human eye can perceive a 2 mil indentation. ASTM F970 does not mean that there is no indentation in the product, on the contrary, it defines the acceptable amount. That is, less than 5 mils.

LABORATORY TEST



24H

250 PSI



24H

0 PSI



RESULT

OK: 0 to 5 mils

Although ASTM F970 is the industry standard, it is common to see modified tests where a much higher load has been used. This does not mean that the product is stronger as there is no approved test to refer to above a 250 pounds per square inch (PSI) charge. This type of test is outside the scope of the method, and published results are often marked with an asterisk to note the deviation.

In short, the decision on which flooring to choose, with regard to the impact of static load, should not come down to just testing with the highest pressure. It is important to make sure you understand how the material was tested, because if the two floors have not been tested by ASTM F970, the results are unlikely to be comparable.

ASTM F970

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