

VERTICAL DEFORMATION:

WHAT IS IT AND WHAT DOES IT MEAN FOR MY FIELD?

Vertical deformation is a measure of how much a surface gives underfoot.

Surfaces that are too soft (high vertical deformation) absorb a lot of the energy athletes exert when running and that energy is not returned to the athlete. Playing on a surface with high vertical deformation can be like running on beach sand and requires a great expenditure of energy. Athletes exerting more energy on a soft surface will become tired sooner and will either require greater periods of rest or be subject to fatigue injuries such as pulled muscles. Surfaces that are too firm (low vertical deformation) are hard and unforgiving and can create discomfort or injury.

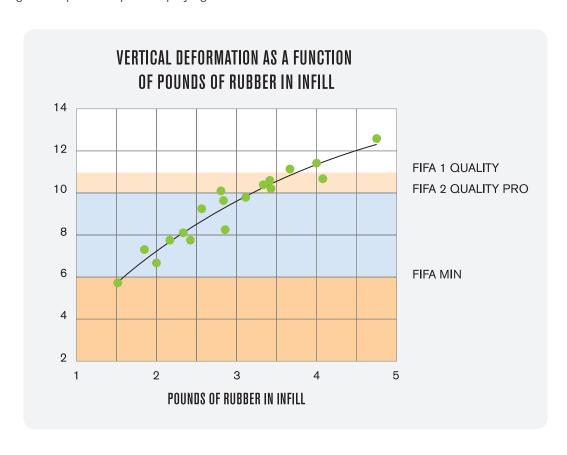
FIFA, the governing body of soccer, has established vertical deformation ranges that provide optimum playing surfaces.

Acceptable ranges on synthetic turf playing surfaces are 6-11 mm.

The one factor which has the most influence on vertical deformation is the amount of rubber in the infill. Vertical deformation in optimum ranges is not determined by the total amount of infill. It is determined by the amount of rubber.

Systems with more than 3 pounds of rubber per square foot can exceed the upper limits for vertical deformation based on FIFA Pro standards. Systems with more than 3.5 pounds of rubber per square foot exceed the upper limit for vertical deformation for FIFA Quality fields.

Surfaces with a vertical deformation measurement below 6 are too hard and can cause injuries, as well as poor performance.



Ultimately, the optimum vertical deformation of a system is not determined by total infill weight, but by having the right amount of rubber in the infill. The following chart shows a sample of fields infilled at various levels and it shows there is no correlation between the total amount of infill and the vertical deformation measured in the system.

