

THE SCIENCE BEHIND THE SURFACE

shaw[®]
SPORTS TURF

WHAT IS BULK DENSITY?

The amount of material in particle form that will fit into a known volume is called the Bulk Density of that material. Shaw Sports Turf conducts two Bulk Density measurements for evaluating infill, Free Flowing Bulk Density and Tapped Bulk Density.

MEASURING FREE FLOWING BULK DENSITY

Free Flowing Bulk Density is measured by pouring a known volume of infill material into a graduated cylinder from a certain height. The infill is poured into the cylinder until it completely fills the cylinder and overflows. The excess infill is carefully scraped away until the infill is even with the top of the cylinder. The materials are measured in a non-compacted state; the weight of the material divided by the volume is recorded as the Bulk Density. The weight of the cylinder is subtracted from the gross weight to get the actual weight of the infill being measured. The density is calculated as mass/volume.

MEASURING TAPPED BULK DENSITY

Tapped Bulk Density is obtained by mechanically tapping a graduated cylinder containing the infill material until little volume change is observed. The Tapped Bulk Density is calculated as the mass divided by the final volume of infill material.



WHAT DOES THIS MEAN FOR MY FIELD?

The picture shows the bulk density of eight different types of infill. Each cylinder holds the same weight of infill but the volume is different for each kind. This displays the differences in bulk density for each product. The low density products are the ones shown with more volume in the cylinder. Lower density means that the product is more cost effective because it doesn't require as much in weight to gain the volume needed for your field. This can allow for lower infill cost while still maintaining the safety and performance of your playing surface.