

THE SCIENCE BEHIND THE SURFACE

shaw[®]
SPORTS TURF

WHAT IS VERTICAL BALL REBOUND?

Vertical Ball Rebound measures the height of the ball bounce after the ball is dropped on a synthetic turf playing surface. The ball rebound height is an indicator of the playability and suitability of the field. It also ensures consistency between the player, ball, and surface.

MEASURING VERTICAL BALL REBOUND

The test is conducted with an electromagnetic or vacuum release mechanism which releases a soccer ball from a height of 2 meters. From that the height of the rebound is measured. It uses a sensitive microphone to measure the time between the first and second impact. Software calculates the rebound height from that time period, using a formula prescribed by FIFA.

The test is conducted five times in each testing location and the average results are calculated. Six locations are tested across the playing surface and each test must fall within the acceptable range for the surface to meet the requirements of this test. The Synthetic Turf Council (STC) recommends that a soccer ball rebounds to a height between 60 to 100 centimeters on a community field, and 60 to 85 centimeters on a stadium field. These ranges are based on a comprehensive study done on natural turf fields. The Vertical Ball Rebound test for synthetic turf can also be applied to other ball sports which are traditionally played on natural grass.

WHAT DOES THIS MEAN FOR MY FIELD?

Vertical Ball Rebound will determine how the ball will interact with your synthetic turf surface. It will also determine how your players will interact with the ball. If the vertical ball rebound on synthetic turf closely mimics that of a natural grass field, then your athletes will react naturally to the ball. If it does not closely mimic the vertical ball rebound of natural grass then your athletes will react differently, compromising their natural abilities.

Calculation and expression of results

For each test calculate the rebound height using the formula:

$$H = 1.23 (T - Jt)^2 \times 100$$

Where:

H = rebound height in cm

T = the time between the first and second impact in seconds

Jt = 0.025s

