A common attribute of heavily-used natural turf fields and worn-out synthetic surfaces is unacceptable playing surface hardness. In the case of natural turf fields, soil compaction and surface hardness are the all-too-often results of the disintegration of turfgrass cover. For synthetic fields, older surfaces are often replaced due to surface hardness issues and subsequent concerns over player safety.

A systematic means is necessary to measure and evaluate the surface hardness of sports fields. The American Society for Testing and Materials (ASTM) has developed a set of procedures utilizing a device called the Clegg Impact Soil tester (CIST) to assess the surface hardness of North American football fields (ASTM F 1936-98).

The Clegg Impact Soil Tester (CIST) is a device that can be used to measure surface hardness. The CIST consists of a cylindrical impact missile enclosed in a tube that creates minimal friction. The missile is dropped at a prescribed height of 2.0-ft on the surface to be tested. The CIST is equipped with an acceleration transducer and a hand-held electronic display that allows the user to record values generated by the CIST in units of G\text{\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,\,
is determined to have an average $G_{\text{max}}$ value exceeding 200. ASTM adopted the maximum impact level of 200 average $G_{\text{max}}$ for use because this value was accepted by the U.S. Consumer Product Safety Commission for similar test methods.

References


Sports Field of The Year
(F.O.Y.)

Proud of Your Field?
Want to Show Off Your Hard Work?

SFMANJ is inaugurating an annual New Jersey “field of the year” contest. Individual awards will be presented to the school, “F.O.Y.” and parks/recreation “F.O.Y.”

ENTERING is easy, send to:
SFMANJ Contest, Po Box 370, Annandale, NJ 08801 Entries must be received by September 30, 2005

ELIGIBILITY:
*two categories: School or Parks/Recreation fields only
*current member of SFMANJ
*natural grass fields

SEND:
*color photos of your natural grass field (10 maximum)
*name of facility and location
*name of owner
*your name, position and contact number

CRITERIA for awards:
*playability and appearance of the playing surfaces

*based on photos and a site visit by the SFMANJ Award Committee
*feel free to have sports groups in your photo

AWARDS:
Winners will be honored with a plaque at New Jersey Turf Grass Expo in December 2005 and be interviewed for a feature article in SFMANJ “UPDATE” (Also receive a two-night stay at Taj Mahal, Atlantic City and three days of education)

NOTE:
*photos will not be returned and may be used on SFMANJ website and promotional settings.

Question and Answer

Question: How do I calculate the amount of topdressing needed for my athletic field?

Answer: To calculate the amount of topdressing needed for your athletic field multiply the length in feet x width in feet x depth in inches x .0031.

Example: Calculate the amount of topdressing needed to topdress a soccer field measuring 360’ x 210’ with 1/4” topdressing.

$210’ \times 360’ \times 0.25’ \times 0.0031 = 58.59$ cubic yards of material