

Research: Pelzmeter readings are reliable, too

by John Reitman

For more than 30 years, the Stimpmeter has been the standard for measuring green speeds on golf courses. But recent university research using the Stimpmeter and Pelzmeter have led researchers at four institutions to conclude that there now are at least two ways to accurately measure putting green speeds.

Tests using both tools were conducted in a combined study in August 2008 at the University of Arkansas, University of Connecticut and Michigan State University, as well as October 2008 at the University of Tennessee.

Green speed is the distance a golf ball travels after being released from an inclined plane – or in the case of this research, from a Stimpmeter and Pelzmeter. Because not all university researchers or superintendents use just one device or the other to measure green speeds in trials or real world environments, principals in the combined study hoped to determine whether measurements taken with the two tools are comparable. Results of the studies indicate the answer to that question is a resounding “yes.”

Researchers established a strong linear relationship between both tools when measuring green speed across a wide range of ball roll distances on the same turf.

“A more simple way to state this is as long as care is taken when measuring green speed, it really doesn’t matter which device is used since they resulted in the same ball roll distance on a given turf, and measurement repeatability was similar between the two devices,” Doug Karcher, Ph.D., at the University of Arkansas, and one of the authors of the study, told TurfNet.

The findings, authored by Thom Nikolai, Ph.D., of Michigan State; John Sorochan, Ph.D., of Tennessee; Jason Henderson, Ph.D., of UConn; as well as Karcher and Jacob Richards of Arkansas, were published in July in *Applied Turfgrass Science*.



Researchers using the Stimpmeter (left) and Pelzmeter to measure green speed. (Plant Management Network)

“I wasn’t sure what to expect going into the research,” Karcher said. “I was a bit surprised that the Stimpmeter performed practically as well as the Pelzmeter did regarding measurement repeatability.”

Research was conducted on grass grown and maintained under varying management practices. For example, the Arkansas site comprised a 5-year-old, L93 creeping bentgrass green that was irrigated two or three times per week. The UConn green, grassed with A-4, is 1 year old and watered just twice per month; UT’s test green (2 years old) comprises a blend of Providence and SR 1119 creeping bentgrass, and is irrigated two-three times per week; Michigan State’s 20-plus-year-old *Poa annua* green is watered only enough to prevent dry spots. Each location also was subject to various combinations of mowing height and frequency, rolling frequency, turf quality, as well as topdressing and fertilizer programs.

For this research, turf type and management practices were not significant because researchers were attempting only to identify consistent measurements between the two tools at each respective site, not consistency between sites.

Consistent with the standard, recognized practice for measuring green speed with a Stimpmeter, researchers took the average of six readings, three in each of two directions on a flat section of the putting surface with both tools. This procedure was replicated on eight plots at Arkansas, Connecticut and Michigan State and at 10 plots at Tennessee.

The linear relationship between readings taken using both tools was detected in research at all four sites, indicating “that green speed measurements with the Pelzmeter can be expected to be very similar to those measured with the Stimpmeter,” the researchers wrote. Researchers considered any differences in green speed between the devices to be undetectable by golfers.

“Our research does not mean to imply that if anyone uses both instruments at their location that the (green speed) numbers will be exactly the same with both tools,” Nikolai told TurfNet. “It just means they will be very close and that the more readings taken over time will diminish the differences in the readings.”

Edward Stimpson Sr. invented the Stimpmeter in 1935 to prove that greens at Oakmont Country Club were unreasonably fast during that year’s U.S. Open. Forty-one years later, Frank Thomas of the U.S. Golf Association redesigned the device, and it has been widely used to determine putting green speed since. Today, it remains the only device approved by the USGA for such purposes.

The Stimpmeter is an extruded aluminum bar that measures 36 inches long and 1.75 inches wide with a 145-degree, V-shaped groove along its entire length. A golf ball is released from a notch at the end of the

device when the bar is raised to an angle of about 20 degrees. The standard practice for measuring green speed is to average six readings, three in each of two directions on a flat section of the putting surface.

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Eddie Pelz, son of golf instructor Dave Pelz, developed the Pelzmeter in 2003 as an alternative to the Stimpmeter. Critics of the Stimpmeter say that measurements can be flawed if the tool is lifted too quickly or in a jerky motion, or if the ball bounces when it makes contact with the turf. The Pelzmeter has three side-by-side grooves to release three golf balls simultaneously. And its bubble-level system and tapered ramp, the researchers said, help minimize ball bounce where the ramp meets the turf.

The research indicates that using one tool over the other now can be a matter of choice without sacrificing reliable green speed measurements. While a Stimpmeter sells for less than \$100, the Pelzmeter carries a price tag of more than \$600.

“The Stimpmeter definitely wins out on cost,” Karcher said. “However, there is a coolness factor with the Pelzmeter that gadget fanatics will enjoy. The Stimpmeter is more portable and likely would be easier for a golf course maintenance staff to handle when regularly measuring green speed.”

The Pelzmeter also offers its advantages, said Nikolai.

“I think the Pelzmeter is easier to use if you’re alone – especially while performing research, but also on golf course putting greens – because all three balls can be released prior to making a distance measurement. If you do that with a Stimpmeter, one of the three balls will undoubtedly hit the other and you will have to start all over. Therefore, the Pelzmeter allows an individual user to make less trips to retrieve balls and make measurements. For that reason alone I prefer the Pelzmeter, and it will continue to be the tool of choice at Michigan State University for years to come.”

More important than which device is utilized is that the person using it is properly trained.

Said Tennessee's Sorochan: "I do think regardless of which device you use, unless you are properly trained there is the potential for inaccurate measurements."