

PERFECTLY TRUE

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Testing Time

The game of golf is a test. Our job when preparing the course is to provide a good examination of the players' game. We need to present the course in a way that assesses all the various aspects of the game with the golfer ultimately being rewarded for skilful play. We want the course to challenge the players in an interesting and enjoyable way that leaves them wanting more. We achieve this, in part, by setting up the playing surfaces in a way that rewards good play.

The greens pose a major part of the test of the game with roughly half of all the shots being played into or on them. In general, the greens should be firm but receptive enough to reward accurate and well-struck approach shots. They need to take the ball then release it to allow skilful shot-making from the surrounds. And of course they need to be well-paced, smooth and true for putting. To be true to the game they shouldn't be flattering to average play by holding poorly struck shots or those taken from the rough. So, the set-up of the greens is crucially important if they are going to provide the ideal platform for play. This article concerns the perfection of the surface for putting.

Wait for it

If we are going to perfect the surfaces for putting then we have to consider all its requirements. At present certain golfers and greenkeepers declare that the speed of the green is all-important with ever faster being better and nothing else matters. With such single-minded individuals the Stimpmeter reading is king and it seems to be used as a measure of prowess, with anything less than double figures being unsatisfactory and the sign of inadequacy. We all know this is nonsense and that faster doesn't necessarily mean better because there's more to it than that. Of course the green speed is an important playing quality and it needs to be right, but it is not everything. There are other playing quality attributes we must also work at when setting up the

perfect putting surfaces. Surface smoothness is as equally important as speed and it needs to be a key consideration.



Learn from the best

It is always interesting to be around the top tournament professionals because they are really demanding of their greens and with good reason because there's a lot at stake in their game. In the eyes of the true professional the ideal putting surface comprises a combination of optimal speed, smoothness and trueness (let's leave the firmness/receptivity for another article). The Pros' want the surface to provide the perfect roll for the ball in response to their super-accurate read and grooved putting stroke. For tournament play the speed of the surface is the test of the competitors feel and nerve while the perfectly smooth and true roll *rewards their read*. The perfect putting surface tests the player but also gives reward for skilful play. Well-paced, smooth and true is what the perfectionists want. It is true to say that the Pros' would sacrifice an element of speed for improved smooth/trueness. A fair test and no complaints is all that anyone wants. Smoothness is key.

Hold on

At present we can measure the speed of the greens using the Stimpmeter and so we can easily calculate the speed of the surface and evaluate the results. With this simple procedure we can tell the speed of the surface and decide whether it meets our requirement. Fine. The problem is that there has never been an easy or accurate way of measuring or rating the smoothness/trueness of the surfaces to give a good sight on the *quality of the roll*. Until now, we have always relied on our own perception or golfer feedback, neither of which are particularly accurate or helpful. Until now.

Ladies and Gentlemen...

STRI are pleased to announce two major developments that are both aimed at quantifying the smooth/trueness of the putting surfaces. We now have a device that can accurately measure the smooth/trueness of the surface and we have also developed a reliable method for us all to rate the smooth/trueness of the roll. With both these methods we can obtain an accurate reading or rating of the surface smooth/trueness to go alongside our existing measure of the speed. This means that we can start accurately assessing all the required attributes of the putting surfaces. We can form a complete picture to help guide the surface preparations towards perfection.

The great thing about smoothness is that a surface simply can't be *too smooth*. This is maybe the area that the obsessionists might like to get stuck into in an entirely positive and non-damaging way. It might be better if we started brandishing smoothness figures around as the measure of success rather than the Stimpmeter reading.

The Trueness Meter

In conjunction with Sheffield Hallam University and with funding from The R&A, the STRI have developed an objective measurement tool that can accurately measure the smoothness and trueness of the greens. Some of you may have seen the prototype at BTME in January. The Trueness Meter generates a reading of both the smoothness and the trueness of the putting surface.



The trolley is pushed across the surface at a pace that reflects the speed of a ball starting a 10 ft putt. With the aid of clever electronics, a metal wheel (with the same footprint and down pressure of a golf ball) measures the amount of vertical displacement (smoothness) and lateral deviation (trueness) in terms of mm/metre. The machine is incredibly accurate and can pick up minute textural differences in the turf, the influence of *Poa annua* seedheads, the impact of maintenance treatments, wear and tear, pest and disease activity and of course pitch marks. With this device we can accurately measure the microscopic deviations that impact on the smooth and true passage of the ball. Perfectionists lean forward.

The Trueness Meter was used during the Scottish Open at Loch Lomond and The Open at Turnberry this year to help evaluate the surfaces during practice and through the duration of each event. The results were interesting, enlightening and helpful.

Eyes open

The development and use of this tool is a huge leap forward because it allows smooth/trueness to be forensically assessed. During both events we assessed the *minute* effect of the various surface refinement operations to help inform the process

of perfection. During the course of each event we could see the level of deterioration that occurred during the course of each day on individual greens and how well the surface preparations were serving to mend them ready for the next day. The TM also highlighted the negative impact that overly close mowing (being undertaken to increase the speed) was having on the smoothness and trueness of the greens, which supported the need for easing the mowing pressure. So, we believe this device will revolutionise tournament preparation. At present it does have its limitations because it only measures the smoothness/trueness of the greens at a single point in time and, at present, it is beyond the resources of most clubs to purchase one. Maybe in 10 years it will be a standard assessment tool available to everyone. In the meantime we need another method that can provide a good measure of the surface smooth/trueness on an ongoing basis for our down to earth greenkeeping.

Everyone is welcome

To help with your ongoing surface preparation decisions we have also developed a visual rating system to score the smoothness/trueness levels on a day-to-day basis. May we also introduce the STRI Smoothness Scale.

STRI Smoothness Scale	
Score	Description of smoothness/trueness
10	No chatter or snaking. Perfect roll.
9	
8	Predominantly smooth, but with single isolated chatter events and minimal snaking.
7	
6	Chatter dominates with possibly single bobble events and some snaking.
5	
4	Bobbling, snaking and chatter throughout the roll.
3	
2	Bobbling and snaking (ball bouncing around). Ball stops abruptly.
1	
Chatter = Distinct vertical vibrations discernable but ball does not leave ground. Snaking = Lateral deflection from intended path. Bobble = Distinct vertical movement where ball leaves the ground.	

The Smoothness Method

The measurement procedure is relatively simple. All you need is a USGA accredited Stimpmeter, three high quality golf balls (i.e. Titleist Pro V1), your STRI Smoothness Scale and of course a critical eye.

Firstly, you select a flat part of the green (like you would when using the Stimpmeter to measure pace) run each ball down the Stimpmeter, then you critically analyse its roll and give it a score in accordance with the STRI Smoothness Scale. The Stimpmeter gives a fairly standard delivery of the ball and it positions you nicely down behind the roll for a good vantage point. To be really accurate you may choose to get lower down on your hands or knees or even sniffing the turf in front of the roll (the path to perfection always requires full commitment). Each of the three rolls is scored and then the test is repeated in the opposite direction. You then move onto to a different part of the green and repeat the test in either direction. A total of twelve scores are generated and you take the average score, which is the smoothness rating of that green (e.g. 7.2 or 6.7 for instance).

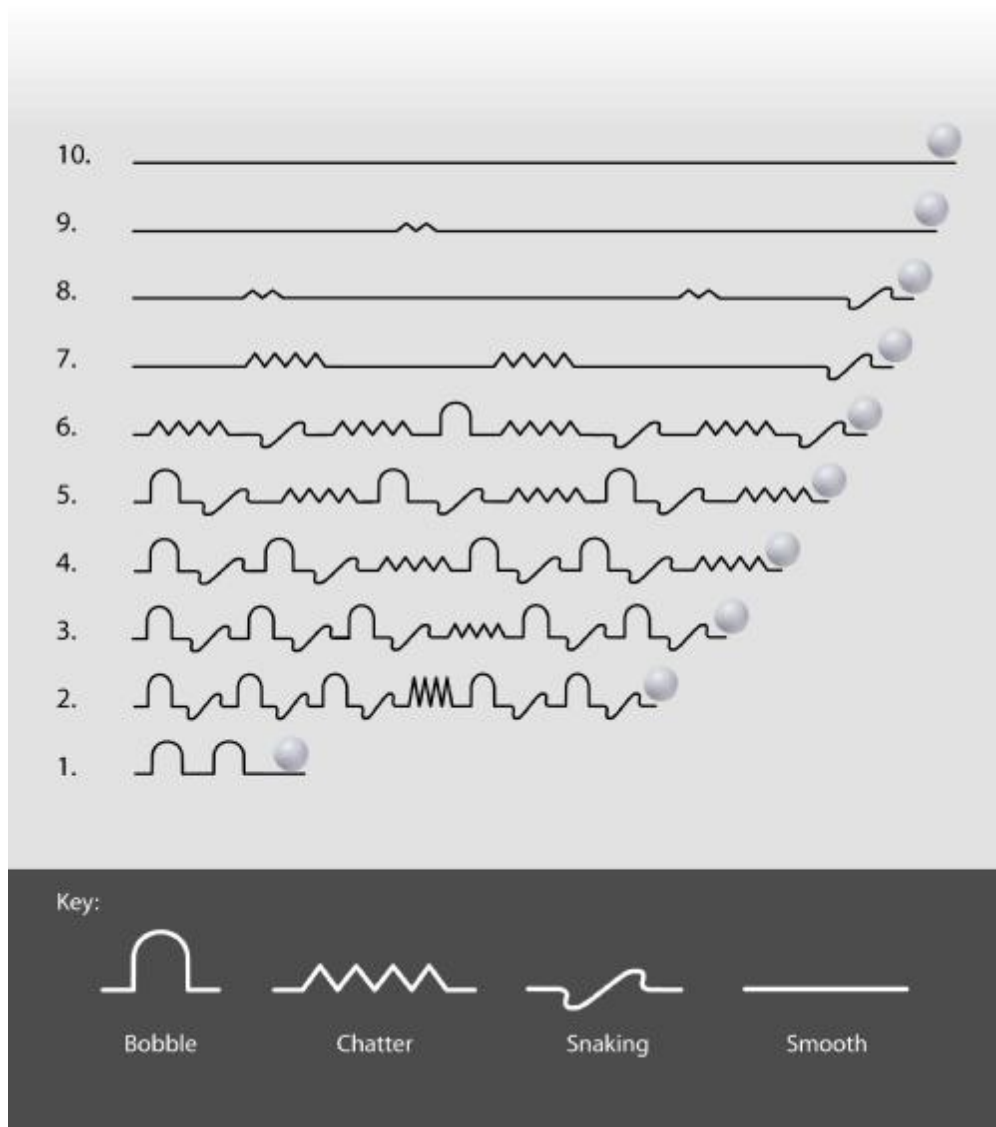
A critical eye

When rating ball roll you are looking for four possible occurrences; “snaking”, “bobble”, “chatter” and a “smooth roll”. “Snaking” is the lateral deflection of the ball from its intended path (affecting the trueness). This is different to borrow and a distinct deviation rather than a consistent borrowing arc. “Bobble” is a distinct vertical movement caused by a significant obstruction that causes the ball to leave the ground. “Chatter” is subtler than bobble and is a discernable vertical vibration/oscillation but the ball does not leave the ground. A “smooth roll” exhibits no bobble or chatter. For each roll you view the reaction of the ball from the surface and score it according to the rating scale.

To help with your scoring refer to the following guide.



STRI Smoothness Scale



You see that when the roll is perfect and there is no bobble, chatter or snaking you give a 10. This is probably unattainable because we are dealing with a natural surface that is under constant damaging pressure from play and from the wider environment. When the surface is predominantly smooth and true but there is occasional isolated single chatter events and some minor snaking then give an 8. A score of 6 is dominated by chatter through the roll but there may also be an odd bobble with occasional snaking. A score of 4 exhibits regular bobble, chatter and some snaking.

A score of 2 is where both bobble and snaking dominates the roll and the ball is literally jumping around. Go to www.stri.co.uk for illustrative video clips to help you get your eye in.

Descriptions are only given for scores 2, 4, 6, 8 and 10 to allow some more refined scoring. For instance, if the greens are generally smooth but you also see 2-3 chatter events through the roll then you score a 7 (better than a 6 not quite an 8). Or, if the greens are almost perfectly smooth and true but there is very minor chatter or snaking you give a 9 (nice one). As you start getting your eye in, you will also be able to differentiate further and start giving 7.5's for rolls that exhibit 2-3 "whispers" of chatter within an otherwise smooth roll (better than a straight 7 but not an 8). Once you are at this level you really know how your greens are performing. It doesn't take long to get your eye in.

The measured approach

The point with both these assessment methods is that you now have an accurate and objective way of measuring smooth/trueness as well as the speed of the putting surfaces. In doing so you will have a much clearer understanding about the quality of your putting surfaces. This will allow you to make better-informed decisions about your existing maintenance plan and its future direction. You can set targets for the performance of the greens throughout the year that if achieved will create surfaces of the desired quality. You can demonstrate when you are succeeding and focus your work on repairing any identified shortcomings. You can move away from the rhetoric and rely on an objective and measured method of fashioning the perfect playing qualities.

What to do?

There are of course lots of ways in which we can work to improve the smoothness of the surfaces. We work to create firm surfaces with a fine and dense sward by setting a good balance of mowing, verticutting, grooming, ironing, top dressing, overseeding, plant growth regulators etc etc etc. The prevention of pest infestations, disease attack and the development of dry patch are smoothness issues. Our task is to build the maintenance programme that creates a balance that works for you to achieve your own year round smoothness targets. Use the smoothness readings to find out what

operations work and what isn't necessary. Maybe some of the more damaging treatments can be set aside because they do more harm than good. You decide. Take a look.

Summing up

We will all become better turf professionals if we set our objectives and base decisions around accurate measurements and work towards definable targets. A measure of smoothness allows you to understand the success of your surface preparations in a more complete way. The Trueness Meter is an incredibly accurate device that can help with super refined decision making, while the STRI Smoothness Scale aims to help with your day to day decision making and standard setting. Being able to measure the surface smoothness as well as pace and having the ability to set specific targets to optimise the performance of the greens will help you to perfect the putting surfaces. The measurements make things better by spurring positive action. To provide the best test for the golfers we need the greenkeepers to test themselves. Perfectly true.

Firmness next.