

From: John Dunlop [jdunlop@acoustoscan.com.au]  
Sent: Dienstag, März 30, 2004 09:00  
To: HJK  
Subject: NBI report

Hans,  
thank you for the new copy of the NBI report, which I also received from another source. I have made some initial comments in the short time in case meetings are coming up. As you can see I don't think their formula is useable.

The NBI report on Ball Roll is an invaluable report as it provides a scientifically reliable reference source on which to base testing methods. I hope that it is posted permanently on the website open to inspection and criticism, and not restricted as it is to a few selected people.

It is unfortunate that when the work was commissioned a choice was made to use 2 m gates in direct contradiction of FIFA's established 1 m system.

The summary gives the trend line for the averages of all the surfaces - with a correlation coefficient of 0.87. This is somewhat misleading as individual types of surface give different trendlines with correlation coefficients ranging from 0.48 to 0.89. This indicates that the uncertainty in the average trendline is fairly high. Thus this trendline cannot be used for the basis of a test method with any great certainty (or accuracy).

Perhaps the solution to the question is in the direct measurements themselves. Rarely in soccer play does the ball roll to a stop. However its deceleration (or speed) along the surface is important to play. So why not use the measurement of delta V to characterise this property of the surface, rather than degrade the information by converting it to roll distance. It would also be difficult to determine uncertainty intervals for roll distance which is necessary when testing for compliance to a specification.

If we look at the natural surfaces tested, delta V for the system ranges from 0.55 to 0.87. The average value with 95% confidence intervals is however 0.68 (0.06) or 0.62 to 0.74. So we might assume a suitable range for a test method would be 0.5 to 0.8.

If we use this range, only 4 of the 12 sets of artificial surface measurements pass (the Salter PE of 0.46 (0.04) cannot be failed at the 95% confidence level).

We might extend the test range to 0.4 to 0.8 to give more allowance to artificial surfaces and to compensate for the heavy slow northern European grasses used in the study.

However this improves the pass rate to only 5 out of 12.

It seems that only the Salter products come near to replicating the roll properties of natural grasses. If Salter can do it then we should force the other products to do so by setting the delta V limits accordingly.