

CASE-001: Performance of an 8 Year Old Competition Track at an NCAA Div-I University

ASET Services recently evaluated an 8 year old competition track at a Division I NCAA University. The system product installed was approved by IAAF, and certified to deliver IAAF performance during lab testing. Our field tests were to be used to determine if the track could be repainted or if it should be resurfaced. ASET found that none of the 19 test points produced shock absorption levels that complied with IAAF published requirements. ASET found that only 2 test points produced thickness readings that complied with IAAF published requirements. Another 13 test points were found to be slightly below the level established as exceptionally thin by the IAAF, or were so close to that thickness level that they could not be excluded from it. The only option that could restore the performance to IAAF requirements was to resurface the entire track.

Introduction:

ASET Services, Inc was hired to determine the force reduction and thickness of an 8 year old competitive running track at a NCAA Division I University. The goal of the project was to provide the university with the current status of their track so that they could determine if the track could simply be repainted or if it needed to be resurfaced to restore performance to the original IAAF required and specified levels.

Testing Methods:

The shock absorption and thickness of the existing track were determined using equipment and methods that comply with the IAAF published rules for testing and performance requirements. The following image shows the shock absorption equipment and thickness gage.

Similar equipment is used to evaluate indoor courts (basketball, volleyball), dance, synthetic turf, and aerobic and fitness surfaces. For more information on shock absorption test equipment please visit our on-line library and review the documents that reference shock absorption or force reduction.



Illustration 1: Shock Absorption and Thickness Test Equipment

Determining the Original Performance and Thickness:

ASET attempted to determine if the facility had been IAAF certified or if the surface had simply been selected because it was IAAF approved. We started by making inquiries within the University and the Architectural firm that hired ASET. None of the people currently engaged in the project were able to provide an answer. Internet searches yielded several articles

stating that the facility had indeed been certified to IAAF rules and that it received a Level 2 certification. Based on this information, and based on the product information available on line the original installation should have conformed to the following:

- Force Reduction: between 35% and 50%
- Thickness: 13 mm

ASET conducted further research and found that the IAAF recommends installing the track slightly thicker than the sample that was tested for the lab trials. "The IAAF Product Certificate for a synthetic surface material indicates the absolute thickness at which a sample of the material, tested in a laboratory, complied with these Specifications. The overall thickness laid will probably have to be greater to ensure that no in-situ test result will fail." (reference 2016 Track and Runway Synthetic Surface Testing Specifications: Published by IAAF. Additional Information from IAAF resources)

- Exceptionally thin sections are those that are less than 80% of those on the Product Certificate (In this case 10.4 mm)
- Force Reduction requirements apply to life of product and to resurfaced tracks

Results:

Force Reduction (Shock Absorption)

The following illustration contains the shock absorption readings recorded from 19 test points. Only two point produced shock absorption levels above 30%. The average shock absorption was 18%. IAAF requires a minimum shock absorption of 35%, which is shown in the green shaded region of the illustration. No point exceeded 35%.

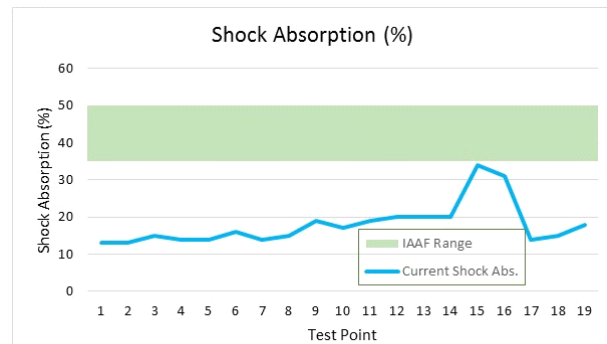


Illustration 2: Shock Absorption by Test Point

The lowest shock absorption level recorded was 13%, which was produced at two locations. Another four test points produced a shock absorption of only 14%.

Thickness

The following illustration contains the thickness readings from 19 test points on the track. The region in red meets the requirements for 'Exceptionally Thin' per the IAAF specifications. Three of the 19 test points are below 10.4 mm and clearly qualify as exceptionally thin. Another 13 test points were recorded at 10.0 or 11.0 mm, his places them within the definition of exceptionally thin, or so close to it that they cannot be excluded from it. Only 2 of the 19 test points were thick enough that they met or barely exceeded the thickness guidelines published by IAAF.

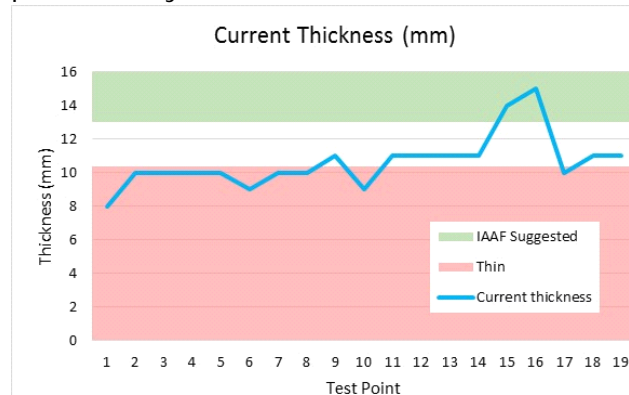


Illustration 3: Thickness Readings by Test Point

The average thickness over the entire track was 10.6 mm, meaning that on average, the track had lost 2.4 mm of material on average. The lowest thickness recorded was 9 mm, and two locations produced that reading.

Conclusions

The track should have been installed to a thickness no less than the 13 mm that was used during lab testing. This means that during the 8 years that the track has been in service, the surface has lost, at least 2.4 mm of material on average. The lowest thickness measured was 9 mm, meaning that the track should have lost at least 13 mm, if IAAF installation guidelines had been followed.

The track should produce a shock absorption level of no less than 35%, per IAAF Rules. The track produced an average shock absorption level of only 18%. This means that during the 8 years of use the shock absorption has been reduced by at least 17% on average. The lowest shock absorption reading was 13%, meaning that these areas of the track were now 22% below the minimum level required by the IAAF.

The track has lost a substantial amount of material and would need to be resurfaced (more rubber material added) in order to comply with IAAF's minimum requirements. Painting the surface will not bring the track back into compliance for IAAF certification.

Comments:

If the initial performance is not verified, owners have no way of knowing that the surface delivers the specified protection and performance levels. The lack of verification testing also makes it impossible to determine how quickly or how much the surface changes over time. For more information on performance testing of new sport surfaces and how specifications can be written to ensure that specified safety and performance levels are delivered visit: www.aset-trueperformance.com.

Contact us with any questions you have about the performance of your new or current sport or play surface.

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