



# **ISA Sport USA**

DMA Sports Design Group

## **Product Safety and Performance Evaluation**

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Tour Links, Inc.  
5030 Seminole Boulevard  
St. Petersburg, FL 33708

June 30, 2011

### **Prepared for:**

Tour Links, Inc.  
5030 Seminole Boulevard  
St. Petersburg, FL 33708  
Attn: David Barlow

### **Prepared by:**

*ISA USA / DMA Sports Design Group*  
Pembroke, NH \*Sturbridge, MA\*Lubbock, TX  
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Contact: Mr. Jeffery Gentile

May 31, 2011

Tour Links, Inc.  
5030 Seminole Boulevard  
St. Petersburg, FL 33708

*Attn: Mr. David Barlow*

**RE: UltraBase**  
**Safety and Performance Test Evaluation**

Mr. Barlow,

On June 30, 2011, ISA Sport USA personnel conducted Product testing of FieldTurf Pro Classic Series samples over the UltraBase system as supplied by Tour Links. The purpose of the tests was to evaluate the Safety and Performance of each system along with the comparison to the FIFA Standards for One Star and Two Star performance.

The testing can only be used as a comparison to the performance standards as defined by FIFA for products installed in the field.

### **Products Tested**

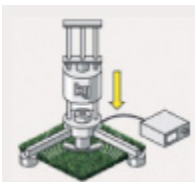
The type of turf system used for testing was FieldTurf Pro Classic. The FieldTurf was infilled with 2.6LBS/SF of rubber and 8.0LBS/SF of sand, both supplied by the manufacturer. The product was subjected to Shock Absorbency, Vertical Deformation, HIC and Gmax. The FieldTurf system was placed on top of UltraBase panels which in turn was placed on top of concrete.

### **Atmospheric Conditions**

Field Testing Date: **4/29/11**  
Surface Temp: **72.7° F**  
Humidity: **21.7%**

Air Temperature: **85.5° F**  
Turf Backing Temp: **71.1° F**  
Wind Average Speed: **N/A**

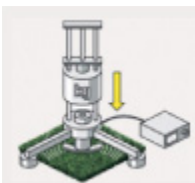
### **Gmax**



### Shock Absorption (FIFA Test Method 04)

Shock Absorption is measured using the Berlin Artificial Athlete. A mass is allowed to fall onto a spring that rests, via a load cell and test foot on the test specimen, and the maximum force applied is recorded. The percentage reduction in this force relative to the maximum force measured in a concrete surface is reported as Force Reduction.

The acceptable range is determined as a comparison to the “Perfect” Natural grass field as determined by FIFA. The range for a One Star field is 55-70% and 60-70% for a Two Star field. Three drops are taken at each location, the first drop is thrown out and the second and third are averaged together. The chart below shows a description of Location within Sample Given, test results for Shock Absorbency and Vertical Deformation.



### Vertical Deformation (FIFA Test Method 05)

Standard Vertical Deformation is measured using the Berlin Artificial Athlete. A mass is allowed to fall onto a spring that rests, via a load cell and test foot, on the test specimen and the maximum and standard deformation of the surface is determined.

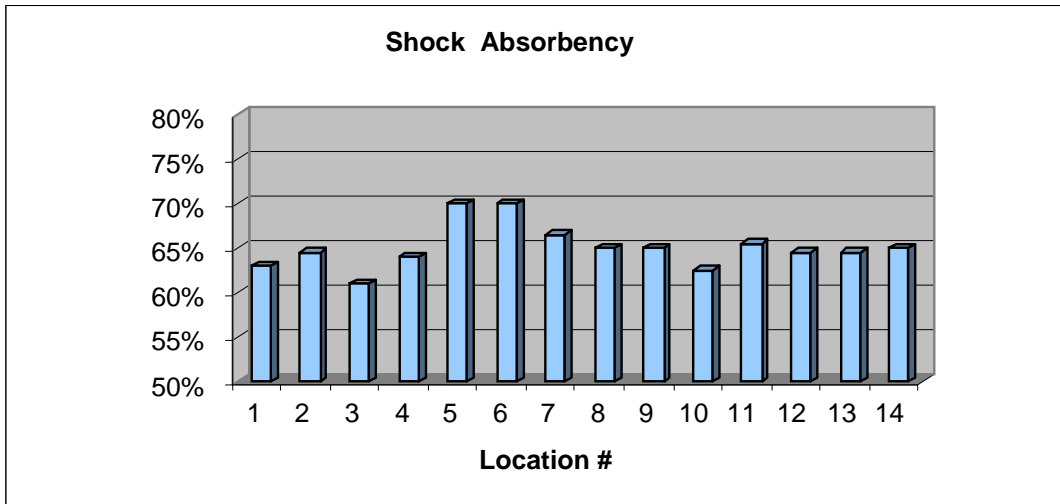
The acceptable range is determined as a comparison to the “Perfect” Natural grass field as determined by FIFA. The range for a One Star field is 4-9mm and 4-8mm for a Two Star field. Three drops are taken at each location, the first drop is thrown out and the second and third are averaged together. The chart below shows a description of Location within Sample Given, test results for Shock Absorbency and Vertical Deformation.



<u>Location #</u>	<u>Drop #</u>	<u>Shock absorbcency</u>	<u>Average of drops 2 and 3</u>	<u>Vertical Deformation</u>	<u>Average of drops 2 and 3</u>	<u>Infill Depth in mm</u>
1	1	67%	63%	7.5	6.8	37
	2	64%		6.9		
	3	62%		6.7		
2	1	69%	64.5%	8.3	7.4	37
	2	65%		7.5		
	3	64%		7.2		
3	1	67%	61%	9.6	7.9	37
	2	62%		8.2		
	3	60%		7.5		
4	1	69%	64%	9.5	8.2	37
	2	65%		8.5		
	3	63%		7.8		
5	1	73%	70%	8.7	8.2	37
	2	70%		8.3		
	3	70%		8.1		
6	1	72%	70%	9.5	8.0	37
	2	70%		8.2		
	3	70%		7.8		
7	1	70%	66.5%	8.4	7.7	37
	2	67%		7.9		
	3	66%		7.5		
8	1	70%	65%	8.2	7.5	37
	2	66%		7.8		
	3	64%		7.2		
9	1	69%	65%	9.3	8.3	37
	2	66%		8.3		
	3	64%		8.2		
10	1	67%	62.5%	9.1	7.3	37
	2	63%		7.5		
	3	62%		7.1		
11	1	69%	65.5%	7.4	7.0	37
	2	66%		7.0		
	3	65%		6.9		
12	1	67%	64.5%	7.6	7.1	37
	2	65%		7.3		
	3	64%		6.9		
13	1	70%	64.5%	8.1	7.1	37
	2	66%		7.2		
	3	63%		6.9		
14	1	68%	65%	7.6	6.4	37
	2	64%		6.5		
	3	66%		6.3		

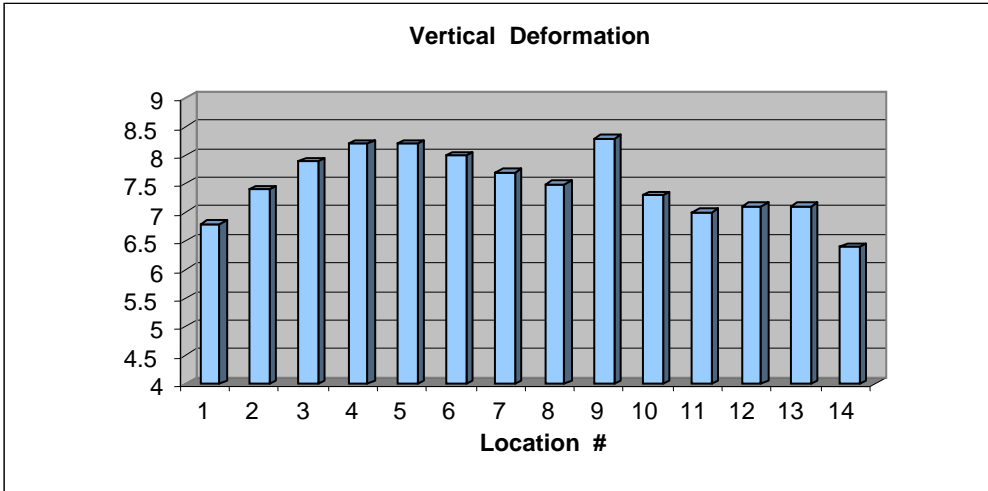
**Shock Absorbency Test Summary**

These two tests are the most important tests to determine not only the shock absorbency of a system, but the area resiliency shown around the impact point. These tests will show if a system is too soft or too hard. Softness and shock absorbency are two totally different properties, however most of the industry thinks softer is better. When a synthetic turf system becomes too soft then the vertical deformation can be negatively effected. When all the UltraBase Panel products were placed underneath the turf system tested the shock absorbency tested consistently and results were well within the acceptable range. The UltraBase Panel products have shown in these tests that although it does absorb shock, it does not make a system overly soft.



### Vertical Deformation Test Summary

When all the UltraBase Panel products where placed beneath the turf system tested, the Deformation increased slightly when compared to the same turf systems on concrete. These results show a slight increase in Deformation toward the high end of the acceptable range, however, as a system ages it is typical to see a slight decrease in deformation. This shows UltraBase Panels to have another beneficial effect when used in addition to the turf and infill's tested as a complete system.



ISA-Sport USA is here to assist you from evaluation of products through testing in the field to assure a proper installation and performance of your synthetic grass field.

Yours truly,



Field Testing Coordinator

Supervision by;



William J. Mikula, P.E