



LABORATORY TESTING TEMPERATURE EVALUATION



Project Information

Project Name	Temperature Evaluation SBR Rubber vs TPE		
Client Info	Guardian Innovations 3044 Adriatic Court Peachtree Corners, GA 30071		
Report Date	11/1/2016	Test Date	4/21/2016
Report Status	Final	Job no.	90905/991
Prepared by	Kieran O'Donnell Field Operation Manager		
Checked by	Jeffrey Gentile Laboratory Director		

Notes:

1. This report has been prepared by Sports Labs USA with all reasonable skill, care and diligence within the terms of the contract with the Client and within the limitations of the resources devoted to it.
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Summary

The following testing was performed to determine the relative effect infill can have on the surface temperature of a synthetic turf system. A number of synthetic turf systems were tested, each used the same synthetic turf carpet with only the infill varied between systems. All were exposed to infra-red heat lamps for a prolonged period to simulate the heating of the sun in a controlled environment. The resulting temperatures were observed and recorded.

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Introduction

Sports Labs USA was commissioned to perform a temperature evaluation on two turf systems, each with a different infill composition paired with the same synthetic turf carpet. The results will be compared to show a relative temperature difference.

Procedure

Each system was constructed and prepared per EN 12229: Surfaces for sports areas - Procedure for the preparation of synthetic turf and textile pieces.

Each system was constructed using the infill combinations shown in the systems description table below.

The samples were conditioned to room temperature for at least 24 hours.

The following sensors were used to capture and record measurements to a digital data logger every 60 seconds:

- (2) thermo-couples mounted in series to provide a 2 point average of the surface temperature.

The samples were heated for 3.5 hours. All of the data was compiled and the average temperatures for each hour were found. This report will present for each system, the hourly average temperature recorded at each sensor as well as the average for each type of temperature measurement sensor.

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System Descriptions

System ID	System Description
SBR Rubber / Sand	<p>Synthetic Turf Carpet: 2.25" Slit Film</p> <p>Infill Combination: 50% SBR Rubber/50% Silica sand (by weight)</p> <p>$\frac{3}{4}$" Pile Exposure</p>
TPE/Sand	<p>Synthetic Turf Carpet: 2.25" Slit Film</p> <p>Infill Combination: 50% TPE/50% Silica sand (by weight)</p> <p>$\frac{3}{4}$" Pile Exposure</p>

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System Results

SBR Rubber / Sand

Avg Temperature per Time Period		
Temperature (F°) per Sensor		
Exposure Time Period	Surface Sensor #1	Surface Sensor #2
0hr-1hr	160.3	163.5
1hr-2hr	182.3	183.4
2hr-3hr	198.6	190.7
3hr-3.5hr	208.2	204.3

Guardian Innovations TPE/Sand

Avg Temperature per Time Period		
Temperature (F°) per Sensor		
Exposure Time Period	Surface Sensor #1	Surface Sensor #2
0hr-1hr	144.9	158.2
1hr-2hr	167.5	178.7
2hr-3hr	173.3	180.5
3hr-3.5hr	174.6	181.7

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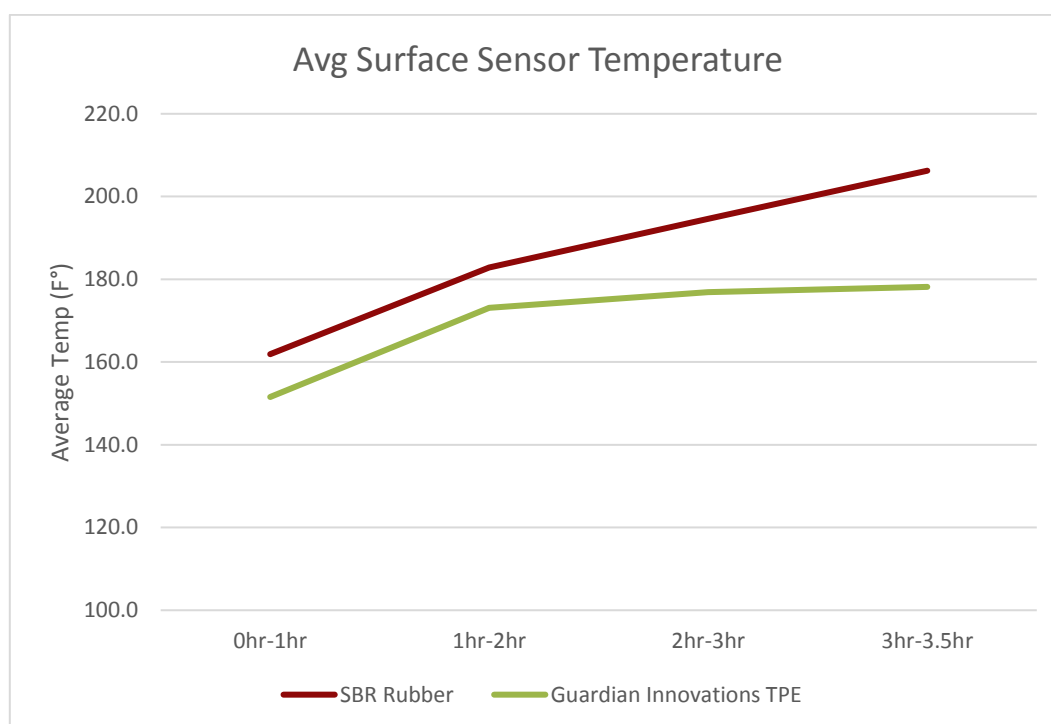


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Comparison Results

Average Surface Sensor Temperature per Time Period			
Average Temperature (F°) per Sensor Type			
Exposure Time Period	SBR Rubber / Sand	Temp Difference (F°)	Guardian Innovations TPE/Sand
0hr-1hr	161.9	10.4	151.6
1hr-2hr	182.9	9.8	173.1
2hr-3hr	194.7	17.8	176.9
3hr-3.5hr	206.3	28.1	178.2



End of Report

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