LABORATORY TESTING
TEMPERATURE EVALUATION

Project Information

Project Name	Temperature Evaluation Purefill		
Client Info	FieldTurf 175 N Industrial Blvd NE Calhoun, GA 30721		
Report Date	4/21/2017	**Test Date**	3/28/2017
Report Status	Final	**Job no.**	91970/2060
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Introduction

Sports Labs USA was commissioned to perform a temperature evaluation per FIFA Test Method 14. Complete results and background can be found in subsequent sections of this report.

Summary

The following testing was performed to determine the relative effect infill can have on the surface temperature of a synthetic turf system. Synthetic turf carpet with infill was exposed to infra-red heat lamps for a prolonged period to simulate the heating of the sun in a controlled environment per FIFA Test Method 14 heating apparatus. The resulting temperatures were observed and recorded.

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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.

Heat Test

The following sensors were used to capture and record measurements to a digital data logger every 5 minutes:

- (3) Infra-red thermo-couples aimed at the sample to register surface temperature.
- (1) thermo-couple placed underneath the center of the turf backing.
- (1) Environmental meter for air temperature and humidity.

The samples were heated for 3 hours. All the data was compiled and the temperatures for each phase were found. This report will present the temperature recorded at each sensor as well as the average for each type of temperature measurement sensor. Final lux measurement after 180 minutes elapsed time was 2897. The maximum surface temperature reached was 121.5 °F, which falls into category 1.

Reference

The chart below shows tolerance categories for the FIFA 14 heat test method

Category	Temperature Range °F
Category 1	<122
Category 1-2	122-129.2
Category 2	131-138.2
Category 2-3	140-149
Category 3	>149

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System Description

System ID	System Description
Purefill	Synthetic Turf Carpet: 2" FTHD Infill Combination: 1.25 lbs. per sq. ft Purefill/4.5 lbs. per sq. ft Sand Underlayment: Versatile

Results

Purefill

Temperature and Humidity per phase					
Phase	**Elapsed Time (min)**	**Ambient Air Temp (°F)**	**Specimen Surface Temp (°F)**	**Backing Center Temp (°F)**	**Humidity (%)**
1	0	71.4	68.7	67.7	36.5
	5	70.7	85.0	94.9	36.8
	10	71.0	94.4	101.3	37.2
	15	71.4	100.2	104.4	37.1
	20	71.8	101.4	106.4	37.5
2	30	72.3	103.0	108.8	37.4
	40	72.5	105.3	111.2	37.6
	50	72.6	107.5	112.0	37.8
	60	72.9	108.8	113.4	37.9
3	75	72.4	110.5	115.8	37.5
	90	72.6	112.8	116.8	37.4
	105	72.9	114.1	118.4	37.1
	120	73.2	116.0	118.4	36.7
	135	73.5	116.6	119.2	37.4
	150	73.9	118.5	120.1	36.9
	165	74.3	116.7	120.6	37.0
	180	74.6	117.7	121.5	36.5

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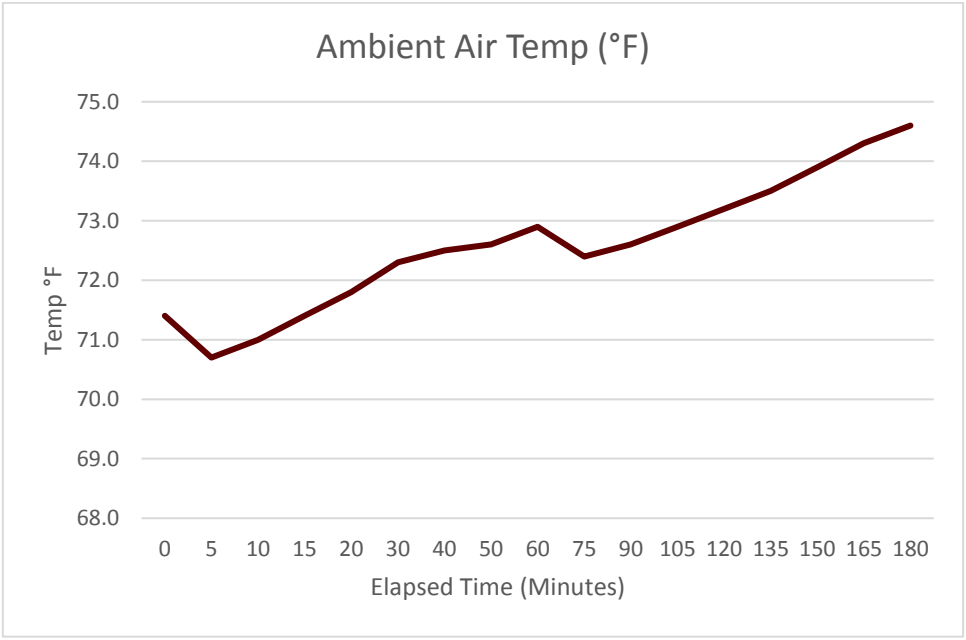

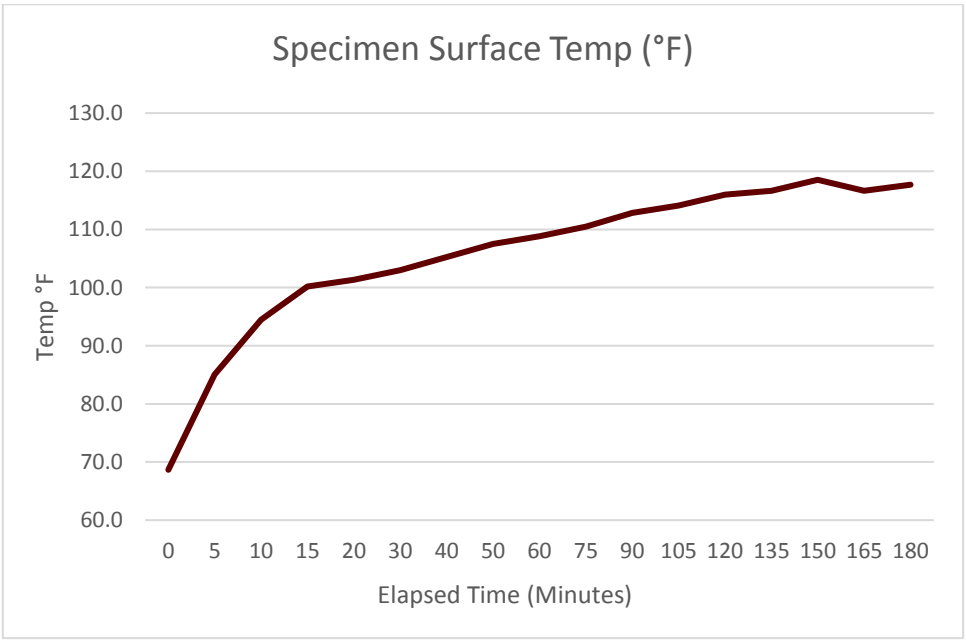

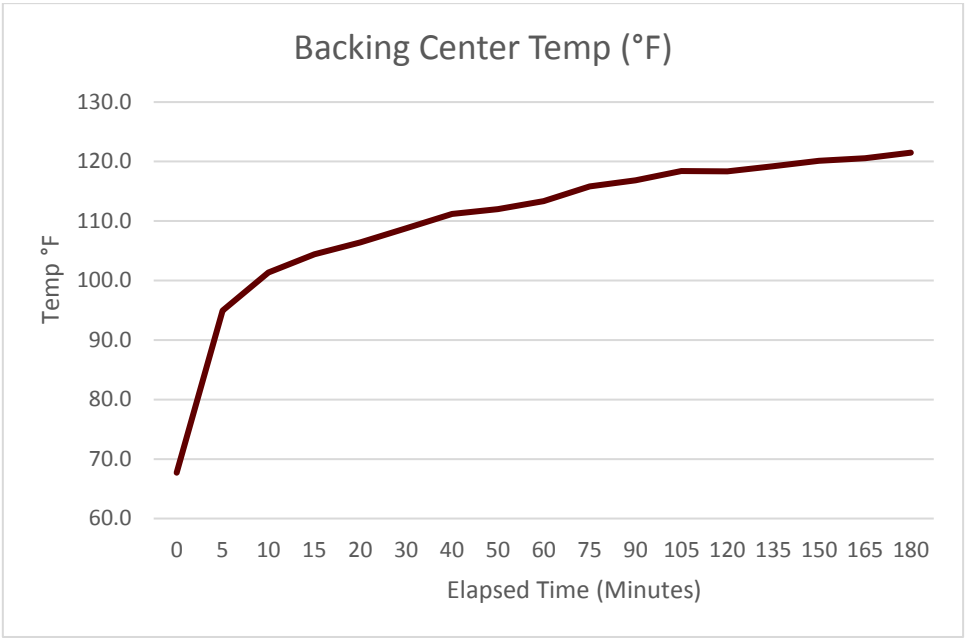

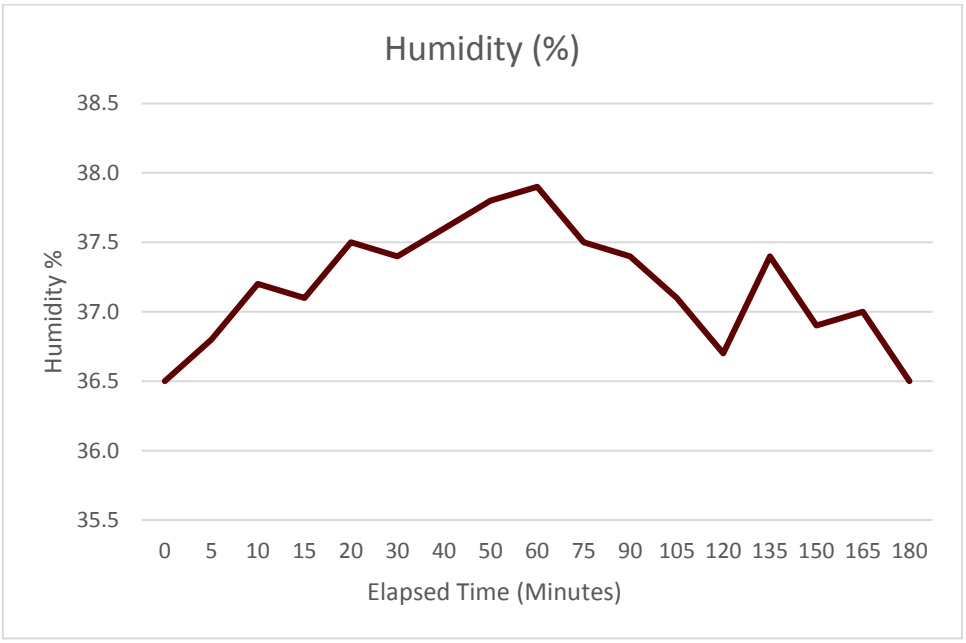

End of Report