

## On-Site Field Testing of Artificial Turf Systems

Artificial turf playing fields are systems of components that include the field base and structure, shock pad, carpet, and infill material. The interplay of all of the elements together impact the playing experience of the field. MCPS has worked to review and analyze the field conditions of our artificial turf playing fields, and to evaluate whether continued adjustments are needed to any combination of the field system components to improve playing conditions.

The initial laboratory report developed by “FIFA Quality Programme” concluded that several of our fields were performing at various ranges, both within and outside, FIFA guidelines for coefficient of abrasion and coefficient of friction (Report found here). These tests, conducted in January 2019, evaluated the “as installed” field condition, and also additional combinations of field components such as the same or similar infill, and infill mixed differently during application. The test results indicated that adjustments to the combinations and structure of the field and infill components improved field performance characteristics. Therefore, maintenance strategies were developed to modify the infill layers to better reflect the test conditions that exhibited the improved characteristics. These strategies included removal of infill, a deep tine aeration, and multiple field grooming applications.

MCPS continued the testing and monitoring process with on-site testing in July 2019 to measure the relative abrasiveness of synthetic turf playing surfaces at three field locations, Albert Einstein, Richard Montgomery, and Walt Whitman High Schools.

Abrasiveness of the three fields tested was measured using the American Society for Testing and Materials (ASTM) F1015 method. This method utilizes friable foam blocks and attaches them to a weighted platform that is pulled over the playing surface in four directions. The weight of foam abraded away determines the relative abrasiveness of the surface. An abrasiveness index is calculated by taking the weight loss for each set of four blocks in grams and dividing by 0.0606 as per ASTM F1015.

The results are presented in a different unit of measurement than the first laboratory test. These results indicate that while the fields are comparable to each other, there is a range of abrasive characteristics at each of the fields. The data points to the infill depth and mix as the focal point for continued improvement of the playing surfaces.

We will continue to monitor field conditions and adjust as necessary as we implement our ongoing maintenance program. We also will continue to maintain open communication with our parents/guardians, student athletes, school leadership, and community partners as we move forward to ensure that we understand how each field is performing.

### On-Site Field Testing of Artificial Turf Fields

- MCPS engaged in testing services with Labosport, one of the world leading sports surface experts, at the recommendation of the Synthetic Turf Council. Testing took place at three MCPS fields, each with organic infill comprised of zeolite.
- Data obtained from the procedure of this test method are indicative of the relative abrasiveness of fabric or carpet type synthetic playing surfaces.
- The abrasiveness index is calculated by taking the weight loss for each set of four blocks in grams and dividing by 0.0606 as per ASTM F1015.
- Below is a summary of results, indicating the abrasiveness index at each location.

School	Abrasive Index Location 4 50 Yd. center of field	Abrasive Index Location 5 25 Yd. line	Abrasive Index Location 9 Center of Soccer Goal	Exposed Pile Height
Richard Montgomery HS	52	55.8	56	.625"
Albert Einstein HS	49.8	44.7	48.2	.75"
Walt Whitman HS	49.2	38.3	43.7	1"

- Richard Montgomery HS
  - Sprinturf- DFE 52
  - Zeofill & Sand layered installation with onsite grooming and tinning to mix infill material.
- Albert Einstein HS
  - Sprinturf- DFE 52
  - Zeofill & Sand layered installation with infill mixed prior to placement.
- Walt Whitman HS
  - Actglobal- Extreme Turf BDX50
  - Ida-Ore Zeolite & Sand layered installation with infill mixed prior to placement.

## INFORMATION

Field name	Albert Einstein High School		
Address	11135 Newport Mill Rd., Kensington, MD 20895		
Date of Test	July 25 <sup>th</sup> 2019		
Surface condition	Dry	Surface temperature	87°F (30°C)
Relative humidity	57 %	Air temperature	87°F (30°C)
Labosport technician(s)	Kris Brown		

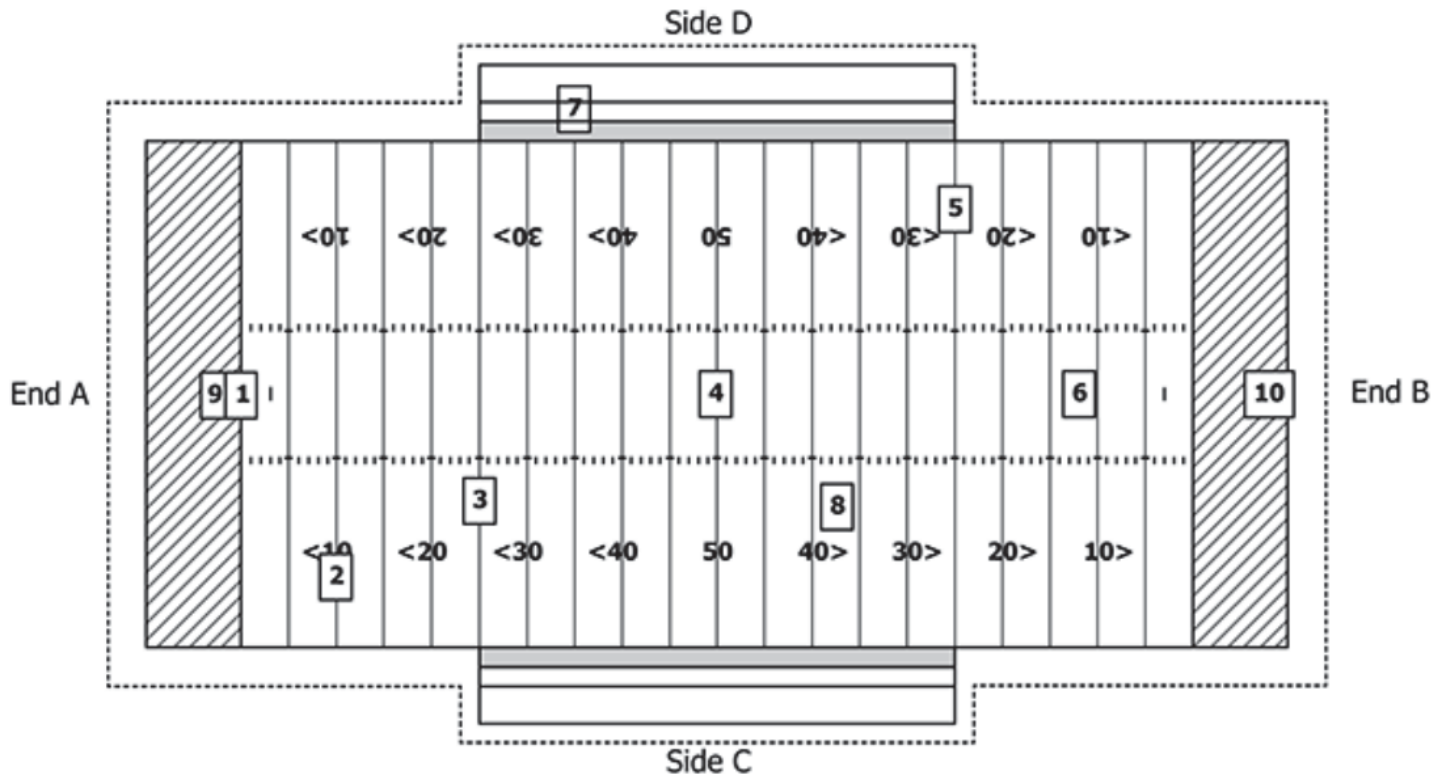
*General view of the field*





## RESULTS

Property	Test method	4	5	9
Abrasive Index	ASTM F1015	49.8	44.7	48.2
Exposed Pile Height	n/a	.75	.75	.75



ASTM F1936 Test Locations



## INFORMATION

Field name	Richard Montgomery High School		
Address	250 Richard Montgomery Dr., Rockville MD 20852		
Date of Test	July 25 <sup>th</sup> 2019		
Surface condition	Dry	Surface temperature	87°F (30°C)
Relative humidity	57 %	Air temperature	87°F (30°C)
Labosport technician(s)	Kris Brown		

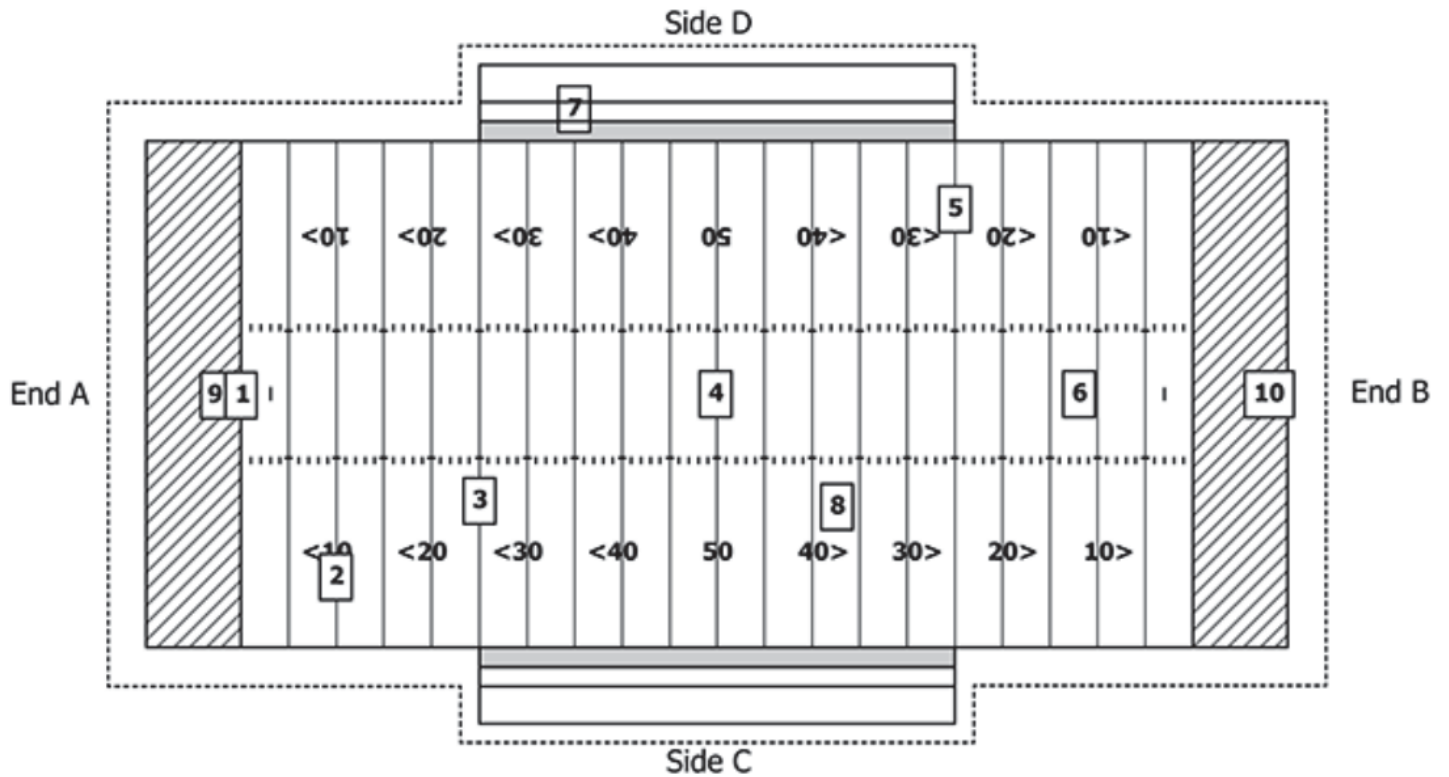
*General view of the field*



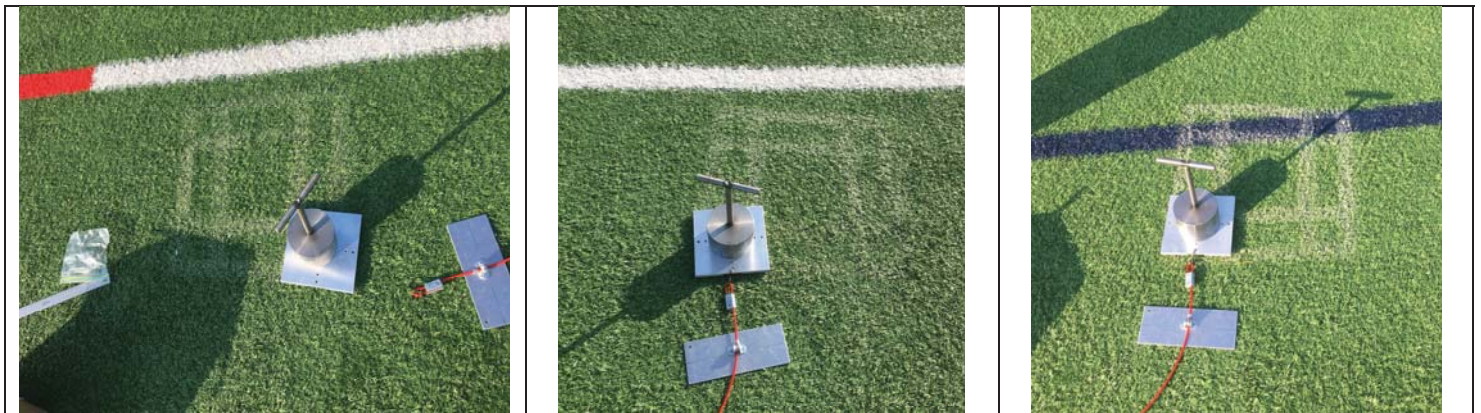


## RESULTS

Property	Test method	4	5	9
Abrasive Index	ASTM F1015	52	55.8	56
Exposed Pile Height	n/a	.625	.625	.625



ASTM F1936 Test Locations



## INFORMATION

Field name	Walt Whitman High School		
Address	7100 Whittier Boulevard, Bethesda, MD 20817		
Date of Test	July 25 <sup>th</sup> 2019		
Surface condition	Dry	Surface temperature	87°F (30°C)
Relative humidity	57 %	Air temperature	87°F (30°C)
Labosport technician(s)	Kris Brown		

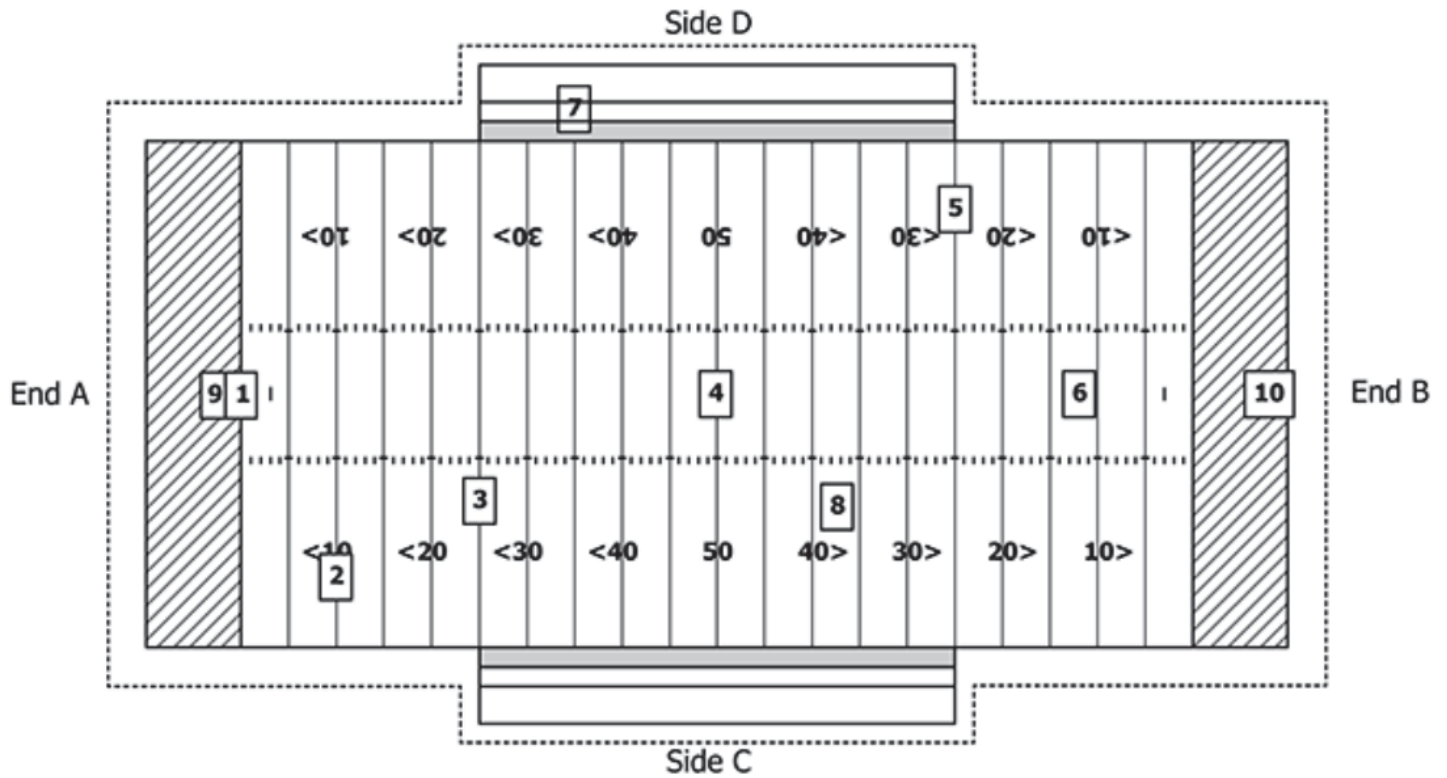
*General view of the field*





## RESULTS

Property	Test method	4	5	9
Abrasive Index	ASTM F1015	49.2	38.3	43.7
Exposed Pile Height	n/a	1.125	1	1



ASTM F1936 Test Locations

