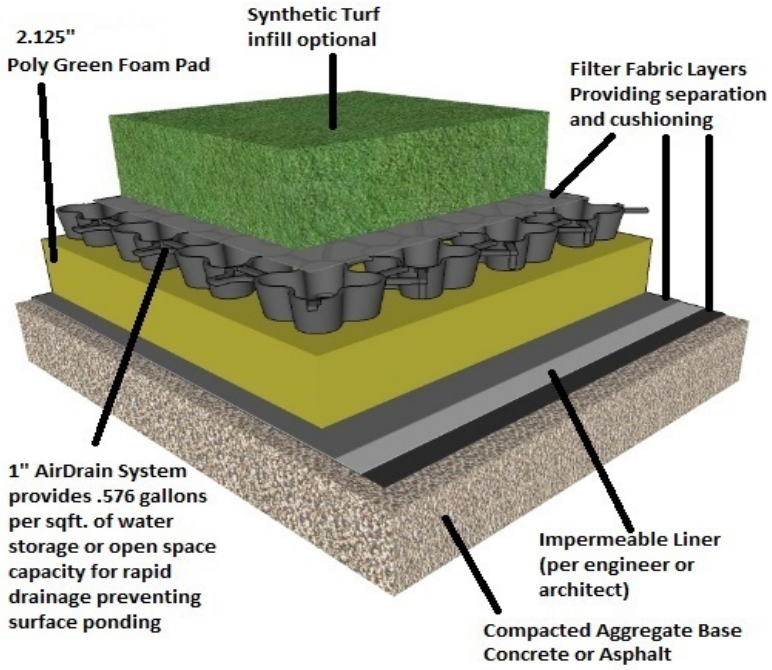
AirDrain – What drains better than Air?

Playground Drainage for 9 ft Fall Height No Infill

Not all drainage is created equal! AirDrain offers 100% vertical drainage and has 92% air void. This combination effectively collects and redirects water easily. Additionally, AirDrain raises the entire profile a full 1", letting gravity drain the entire playground quickly and efficiently. The combined effect of AirDrain is a more stable surface area, reduced expenses for repairs and more play time.

A drainage system should allow for water to quickly drain away from the surface and be directed to exit drains, thus allowing a shorter turnaround time for the continuation of play. AirDrain provides drainage which is unmatched in the industry – up to 40gpm/sf – allowing the surface to be free of water. AirDrain is only limited by the drainage capacity of the profile above and the capacity of the exit drains.

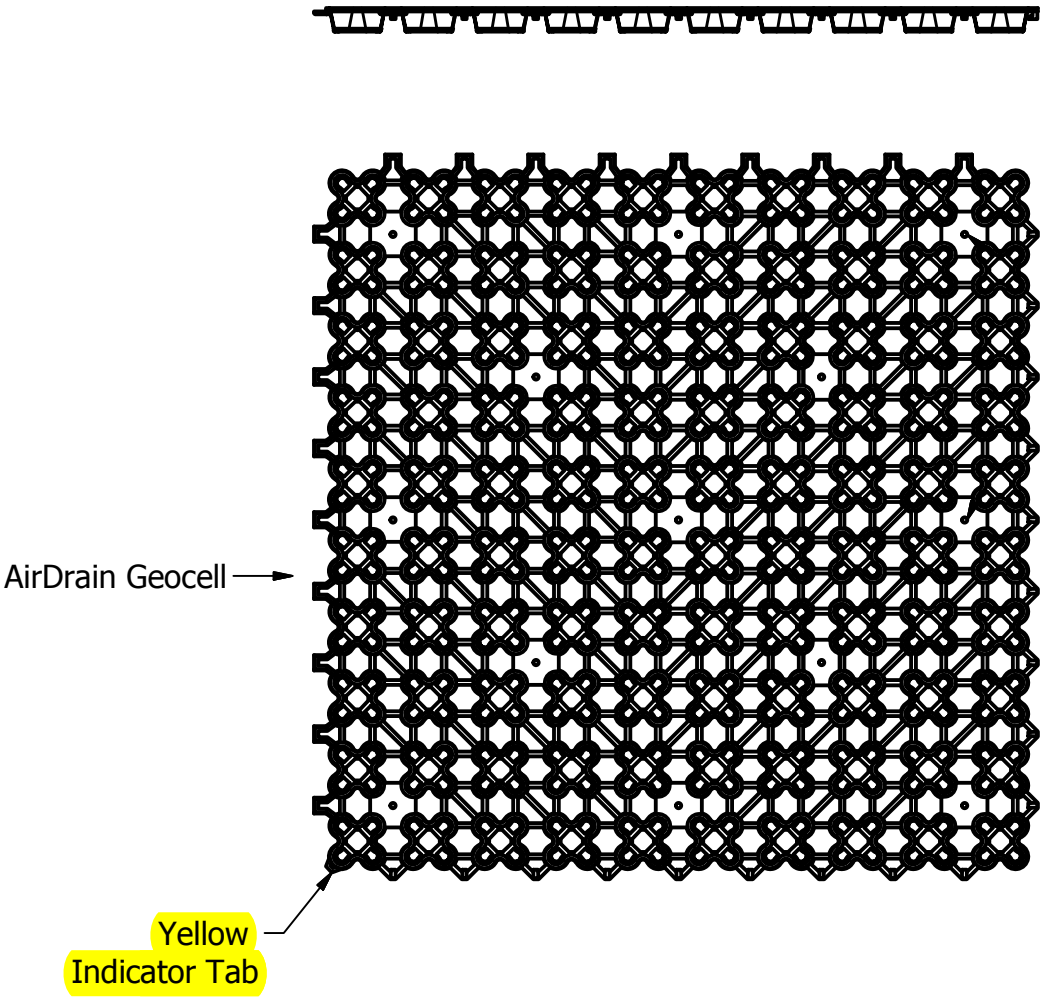
For playgrounds constructed with AirDrain the grid is installed on top of a 2.125" poly green foam pad which is placed directly onto the properly prepared subbase of concrete, asphalt or compacted aggregate. This creates a 1" air void and allows for maximum drainage.



Benefits of an AirDrain playground drainage system include:

- AirDrain raises the entire profile 1" off the subbase and brings gravity into play
- AirDrain's 92% air-void space allows for fast and easy water removal
- Consistent **HIC** and **Gmax** for the life of the AirDrain provides a safe play area
- AirDrain is a 100% recycled copolymer which has the impact modifier "metallocene" added to it for qualification as a "No Break" plastic, making it able to withstand extreme heat and cold and still maintain performance
- AirDrain's quick snap connectors allows for effortless installation
- Minimal site disturbance, excavation and disposal
- Compact shipping reduces transportation costs

*This drawing, specifications and the information contained herein is for general presentation purposes only. All final drawings and layouts should be determined by a licensed engineer(s). HIC & Gmax testing are measured in a lab setting and are not site specific.



Unit Panel Specifications:

Size:	32" x 32" x 1"
Weight:	3.1 lb
Volume:	8% material, 92% air void
Strength:	233 psi (unfilled)
Resin:	100% Recycled (PIR) Copolymer with Impact Modifier "No Break" Polymer Material
Color:	Black (3% carbon black added for UV Protection)

AirDrain Cross Section

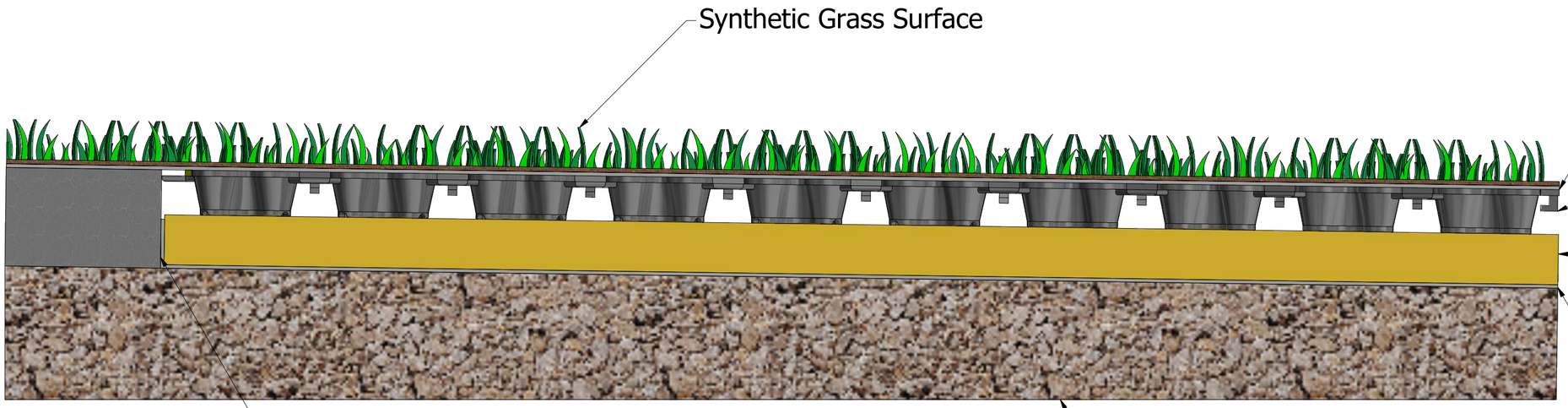
Scale 0.12:1 — Typical — For AirDrain Grass Systems

Airfield Systems, LLC
8028 N May Ave, Suite 201
Oklahoma City, OK 73120
(405) 359-3375

www.airfieldsystems.com

Drawing No. ADCS002.dwg

AirDrain Application with Pad Below AirDrain



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Color:	Black (3% carbon black added for UV Protection)

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airfield systems®

DRAWN G. Abdo	2/22/2015	AirField Systems
CHECKED		TITLE: AirDrain Application with Pad Below AirDrain
QA		
MFG		
APPROVED		
SIZE C	DWG NO Playground_AFS_SP_Under	REV _REV_001
SCALE	SHEET 1 OF 1	

TESTING SERVICES, INC.
817 SHOWALTER AVE., PO BOX 2041
DALTON, GA 30722-2041
PHONE: (706)226-1400 FAX: (706)226-6118

TEST REPORT

CLIENT:	Airfield Systems	REPORT NUMBER:	62296
	8028 North May Avenue Suite 201	LAB TEST NUMBER:	2650-1155-1
	Oklahoma City, OK 73120	DATE:	November 7, 2014
REQUESTED BY:	Michael Bean	PAGE:	1 of 2

Turf Description	ATS Turf 69sl/st	Top
Infill System	None	
Underlayment	8 oz Filter Fabric	
Grid:	AirDrain	
Pad System:	2 1/8" Polygreen Foam	
Sub Base	Concrete	Bottom

Tested Dimension: 3' X 3'

Impact Location: Various

Date of Receipt: August 9, 2014

Testing Period: September 9-12, 2014

Authorization: Micheal Bean

Test Procedure: The submitted sample was evaluated for Shock Absorbing Properties in Accordance with the procedures outlined in ASTM F 1292-10; Standard Specification for Impact Attenuation of Surface Systems Under and Around Playground Equipment

Missle: Hemispherical (Triaxial Accelerometer): Total Drop Assembly Weight (46g) 10 lbs

Test Equipment: Triax 2000 Surface Impactor
Date of Last Calibration: 4/16/2014 by Alpha Automation (Valid thru 5/16/2015)

Sample Pre-Condition: 50±10 RH, 70F±5F for a minimum of 24 hrs piror to testing

Temperature:	Maximum Drop Height That Gives a Gmax of 200 or Less and A HIC of 1000 or less
Ambient, 61.7ºF 38% RH	9'
Hot, 120°F (49°C)	9'
Cold, 25°F (-6°C)	9'
Critical Fall Height (CFH):	9'

Prepared and signed by:

Digitally signed by Erle Miles, Jr. VP
DN: cn=Erle Miles, Jr. VP, o=Testing Services Inc., ou, email=tsioffice@windstream.net, c=US
Date: 2014.11.07 15:54:18 -05'00'

Erle Miles, Jr. VP
Testing Services Inc.

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DALTON, GA 30722-2041
PHONE: (706)226-1400 FAX: (706)226-6118

Client: Airfield Systems
8028 North May Avenue Suite 201
Oklahoma City, OK 73120

Test: ASTM F1292: Impact Attenuation of Surface Systems in and Around Playground Equipment

Turf ID	ATS Turf 69sl/st		Top
Infill	None		
Underlayment:	4 oz Filter Fabric		
Grid:	AirDrain		
Underlayment:	2 1/8" PolyGreen Foam		
Sub Base:	Concrete		Bottom

Conditions:	Ambient, 83°F 39% RH	Report #:	62197	Page #	2 of 4
Date Tested:	9-Sep-14	Fall Height:	9'	Lab #	2650-1155-1

Drop Area: **Center of Assembly**

Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC
1	23.9	7	9'	8.88	128	834
2	23.9	0	9'	8.88	133	884
3	23.9	0	9'	8.88	132	874
Average			Drops 2, 3		133	879

Quadrant of Assembly

Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC
1	23.9	3	9'	8.88	122	767
2	23.9	2	9'	8.88	134	895
3	23.9	1	9'	8.88	141	964
Average			Drops 2, 3		138	930

Quadrant of Assembly

Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC
1	23.9	0	9'	8.88	128	845
2	23.9	4	9'	8.88	132	871
3	23.9	3	9'	8.88	137	919
Average			Drops 2, 3		135	895

Quadrant of Assembly

Drop #	Velocity ft/sec	Angle	Drop Ht/Actual		Drop Ht/Theoretical	Gmax	HIC
1	N/A	N/A	N/A	N/A	#VALUE!	N/A	N/A
2	N/A	N/A	N/A	N/A	#VALUE!	N/A	N/A
3	N/A	N/A	N/A	N/A	#VALUE!	N/A	N/A
Average			Drops 2, 3			#VALUE!	#VALUE!

Overall gmax (3 Locations, Three Drops Each Location in Same Spot)	135
Overall HIC (3 Locations, Three Drops Each Location in Same Spot)	901

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DALTON, GA 30722-2041
PHONE: (706)226-1400 FAX: (706)226-6118

Client: Airfield Systems
8028 North May Avenue Suite 201
Oklahoma City, OK 73120

Test: ASTM F1292: Impact Attenuation of Surface Systems in and Around Playground Equipment

Turf ID	ATS Turf 69sl/st		Top
Infill	None		
Underlayment:	4 oz Filter Fabric		
Grid:	AirDrain		
Underlayment:	2 1/8" PolyGreen Foam		
Sub Base:	Concrete		Bottom

Conditions:	Cold	Min 8hrs @ 20°F	Report #:	62296	Page #	3 of 4
Date Tested:	10-Sep-14		Fall Height:	9'	Lab #	2650-1155-1

Drop Area: **Center of Assembly**

Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC
1	24.0	6	9'	8.95	123	799
2	24.0	7	9'	8.95	131	858
3	24.0	5	9'	8.95	136	885
Average			Drops 2, 3		134	872

Quadrant of Assembly

Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC
1	24.0	0	9'	8.95	133	908
2	24.0	3	9'	8.95	140	972
3	24.0	5	9'	8.95	147	1020
Average			Drops 2, 3		144	996

Quadrant of Assembly

Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC
1	24.0	7	9'	8.95	129	859
2	24.0	3	9'	8.95	144	990
3	24.0	2	9'	8.95	150	1027
Average			Drops 2, 3		147	1009

Quadrant of Assembly

Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC
1	23.9	7	9'	8.88	117	726
2	24.0	3	9'	8.95	124	786
3	24.0	2	9'	8.95	132	848
Average			Drops 2, 3		128	817

Overall gmax (4 Locations, Three Drops Each Location in Same Spot) 138
Overall HIC (4 Locations, Three Drops Each Location in Same Spot) 923

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PHONE: (706)226-1400 FAX: (706)226-6118

Client: Airfield Systems
8028 North May Avenue Suite 201
Oklahoma City, OK 73120

Test: ASTM F1292: Impact Attenuation of Surface Systems in and Around Playground Equipment

Turf ID	ATS Turf 69sl/st		Top
Infill	None		
Underlayment:	4 oz Filter Fabric		
Grid:	AirDrain		
Underlayment:	2 1/8" PolyGreen Foam		
Sub Base:	Concrete		Bottom

Conditions:	Hot	Min 8 hrs @ 120°F	Report #:	62197	Page #	4 of 4
Date Tested:	11-Sep-14		Fall Height:	9'	Lab #	2650-1155-1

Drop Area: **Center of Assembly**

Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC
1	24.0	7	9'	8.95	126	815
2	24.0	6	9'	8.95	133	868
3	24.1	3	9'	9.03	129	833
Average			Drops 2, 3		131	851

Quadrant of Assembly

Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC
1	24.0	5	9'	8.95	130	859
2	24.0	3	9'	8.95	134	882
3	24.0	0	9'	8.95	135	895
Average			Drops 2, 3		135	889

Quadrant of Assembly

Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC
1	23.9	8	9'	8.88	120	766
2	24.0	8	9'	8.95	131	862
3	23.9	1	9'	8.88	129	851
Average			Drops 2, 3		130	857

Quadrant of Assembly

Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC
1	N/A	N/A	N/A	#VALUE!	N/A	N/A
2	N/A	N/A	N/A	#VALUE!	N/A	N/A
3	N/A	N/A	N/A	#VALUE!	N/A	N/A
Average			Drops 2, 3		#VALUE!	#VALUE!

Overall gmax (4 Locations, Three Drops Each Location in Same Spot)	132
Overall HIC (4 Locations, Three Drops Each Location in Same Spot)	866

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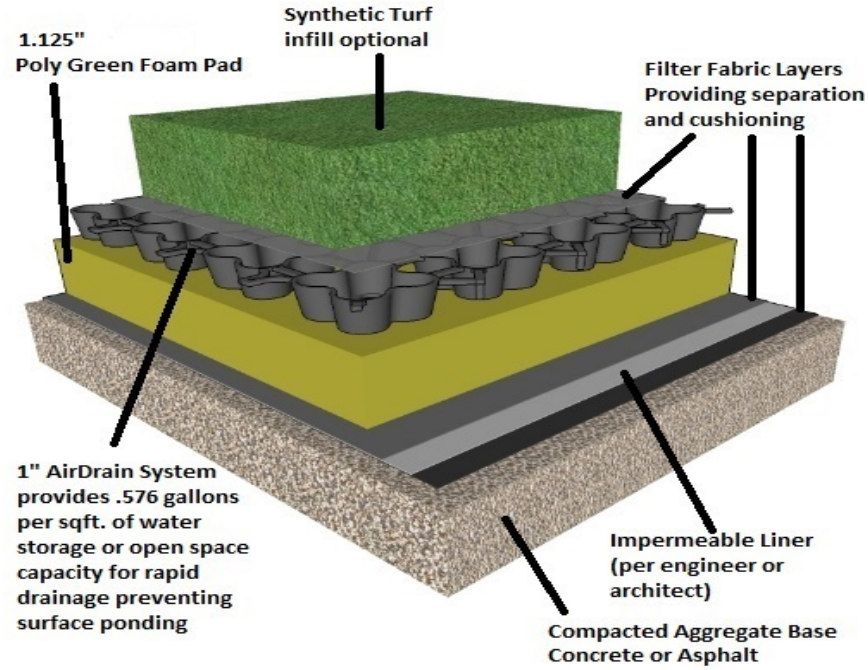
AirDrain – What drains better than Air?

Playground Drainage for 6 ft Fall Height No Infill Solution

Not all drainage is created equal! AirDrain offers 100% vertical drainage and has 92% air void. This combination effectively collects and redirects water easily. Additionally, AirDrain raises the entire profile a full 1", letting gravity drain the entire playground quickly and efficiently. The combined effect of AirDrain is a more stable surface area, reduced expenses for repairs and more play time.

A drainage system should allow for water to quickly drain away from the surface and be directed to exit drains, thus allowing a shorter turnaround time for the continuation of play. AirDrain provides drainage which is unmatched in the industry – up to 40gpm/sf – allowing the surface to be free of water. AirDrain is only limited by the drainage capacity of the profile above and the capacity of the exit drains.

For playgrounds constructed with AirDrain, the grid is installed on top of a 1.125" poly green foam pad which is placed directly onto the properly prepared subbase of concrete, asphalt or compacted aggregate. This creates a 1" air void and allows for maximum drainage.



Benefits of an AirDrain playground drainage system include:

- AirDrain raises the entire profile 1" off the subbase and brings gravity into play
- AirDrain's 92% air-void space allows for fast and easy water removal
- Consistent **HIC** and **Gmax** for the life of the AirDrain provides a safe play area
- AirDrain is a 100% recycled copolymer which has the impact modifier "metallocene" added to it for qualification as a "No Break" plastic, making it able to withstand extreme heat and cold and still maintain performance
- AirDrain's quick snap connectors allows for effortless installation
- Minimal site disturbance, excavation and disposal
- Compact shipping reduces transportation costs

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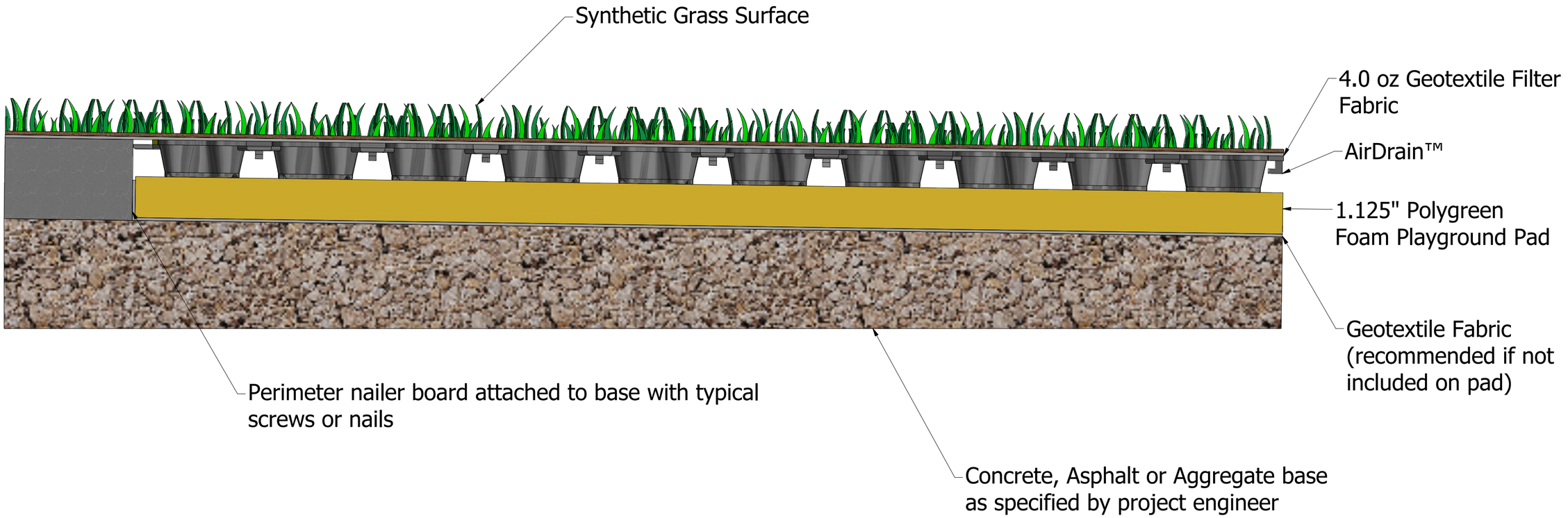
AirDrain Application with Pad Below AirDrain



AirDrain™ Unit Panel Specifications:

Size:	32" x 32" x 1"
Weight:	3.1 lb
Volume:	8% material, 92% air void
Strength:	233 psi (unfilled)
Resin:	100% Recycled (PIR) Copolymer with Impact Modifier "No Break" Polymer Material
Color:	Black (3% carbon black added for UV Protection)

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DRAWN G. Abdo	2/22/2015	AirField Systems
CHECKED		TITLE: AirDrain Application with Pad Below AirDrain
QA		
MFG		
APPROVED		
SIZE C	DWG NO Playground_AFS_SP_Under	REV _REV_001
SCALE	SHEET 1 OF 1	

TESTING SERVICES, INC.
817 SHOWALTER AVE., PO BOX 2041
DALTON, GA 30722-2041
PHONE: (706)226-1400 FAX: (706)226-6118

TEST REPORT

CLIENT:	Airfield Systems	REPORT NUMBER:	62531
	8028 North May Avenue Suite 201	LAB TEST NUMBER:	2669-1901
	Oklahoma City, OK 73120	DATE:	December 9, 2014
REQUESTED BY:	Michael Bean	PAGE:	1 of 2

Turf Description	ATS Turf 69sl/st	Top
Infill System	None	
Underlayment	4 oz Filter Fabric	
Grid:	AirDrain	
Pad System:	1 1/8" Polygreen Foam	
Sub Base	Concrete	Bottom

Tested Dimension: 3' X 3'

Impact Location: Various

Date of Receipt: November 18, 2014

Testing Period: December 3-8, 2014

Authorization: Micheal Bean

Test Procedure: The submitted sample was evaluated for Shock Absorbing Properties in Accordance with the procedures outlined in ASTM F 1292-10; Standard Specification for Impact Attenuation of Surface Systems Under and Around Playground Equipment

Missle: Hemispherical (Triaxial Accelerometer): Total Drop Assembly Weight (46g) 10 lbs

Test Equipment: Triax 2000 Surface Impactor
Date of Last Calibration: 4/16/2014 by Alpha Automation (Valid thru 5/16/2015)

Sample Pre-Condition: 50±10 RH, 70F±5F for a minimum of 24 hrs piror to testing

Temperature:	Maximum Drop Height That Gives a Gmax of 200 or Less and A HIC of 1000 or less
Ambient, 61.7ºF 38% RH	6'
Hot, 120°F (49°C)	6'
Cold, 25°F (-6°C)	6'
Critical Fall Height (CFH):	6'

Prepared and signed by:

Digitally signed by Erle Miles, Jr. VP
DN: cn=Erle Miles, Jr. VP, o=Testing Services Inc., ou, email=tsioffice@windstream.net, c=US
Date: 2014.12.09 11:43:36 -05'00'

Erle Miles, Jr. VP
Testing Services Inc.

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DALTON, GA 30722-2041
PHONE: (706)226-1400 FAX: (706)226-6118

Client: Airfield Systems
8028 North May Avenue Suite 201
Oklahoma City, OK 73120

Test: ASTM F1292: Impact Attenuation of Surface Systems in and Around Playground Equipment

Turf ID	ATS Turf 69sl/st		Top
Infill	None		
Underlayment:	4 oz Filter Fabric		
Grid:	AirDrain		
Underlayment:	1 1/8" PolyGreen Foam		
Sub Base:	Concrete		Bottom

Conditions:	Ambient, 63°F 47% RH	Report #:	62531	Page #	2 of 4
Date Tested:	3-Dec-14	Fall Height:	6'	Lab #	2669-1901

Drop Area: **Center of Assembly**

Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC
1	19.6	4	6'	5.97	135	705
2	19.6	3	6'	5.97	158	872
3	19.7	4	6'	6.03	170	970
Average			Drops 2, 3		164	921

Quadrant of Assembly

Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC
1	19.6	9	6'	5.97	130	610
2	19.6	5	6'	5.97	158	825
3	19.6	2	6'	5.97	161	881
Average			Drops 2, 3		160	853

Quadrant of Assembly

Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC
1	19.6	0	6'	5.97	145	772
2	19.7	2	6'	6.03	149	804
3	19.6	3	6'	5.97	154	862
Average			Drops 2, 3		152	833

Quadrant of Assembly

Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC
1	19.6	8.0	6'	5.97	137	707
2	19.7	5.0	6'	6.03	161	884
3	19.6	6.0	6'	5.97	163	894
Average			Drops 2, 3		162	889

Overall gmax (3 Locations, Three Drops Each Location in Same Spot) 160
Overall HIC (3 Locations, Three Drops Each Location in Same Spot) 874

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PHONE: (706)226-1400 FAX: (706)226-6118

Client: Airfield Systems
8028 North May Avenue Suite 201
Oklahoma City, OK 73120

Test: ASTM F1292: Impact Attenuation of Surface Systems in and Around Playground Equipment

Turf ID	ATS Turf 69sl/st		Top
Infill	None		
Underlayment:	4 oz Filter Fabric		
Grid:	AirDrain		
Underlayment:	1 1/8" PolyGreen Foam		
Sub Base:	Concrete		Bottom

Conditions:	Cold	Min 8hrs @ 20°F	Report #:	62531	Page #	3 of 4
Date Tested:	4-Dec-14		Fall Height:	6'	Lab #	2669-1901

Drop Area: **Center of Assembly**

Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC
1	19.6	5	6'	5.97	163	908
2	19.7	0	6'	6.03	169	914
3	19.6	7	6'	5.97	181	1012
Average			Drops 2, 3		175	963

Quadrant of Assembly

Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC
1	19.5	1	6'	5.91	132	693
2	19.6	5	6'	5.97	142	757
3	19.6	6	6'	5.97	160	852
Average			Drops 2, 3		151	805

Quadrant of Assembly

Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC
1	19.5	5	6'	5.91	145	775
2	19.6	2	6'	5.97	165	930
3	19.7	1	6'	6.03	162	882
Average			Drops 2, 3		164	906

Quadrant of Assembly

Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC
1	19.5	4	6'	5.91	140	764
2	19.6	4	6'	5.97	162	917
3	19.5	8	6'	5.91	170	964
Average			Drops 2, 3		166	941

Overall gmax (4 Locations, Three Drops Each Location in Same Spot) 164
Overall HIC (4 Locations, Three Drops Each Location in Same Spot) 904

OUR LETTERS AND REPORTS APPLY ONLY TO THE SAMPLE TESTED AND ARE NOT NECESSARILY INDICATIVE OF THE QUALITIES OF APPARENTLY IDENTICAL OR SIMILAR PRODUCTS. THESE LETTERS AND REPORTS ARE FOR THE USE ONLY OF THE CLIENT TO WHOM THEY ARE ADDRESSED AND THEIR COMMUNICATION TO ANY OTHERS OR THE USE OF THE NAME TESTING SERVICES, INC. MUST RECEIVE OUR PRIOR WRITTEN APPROVAL. THE REPORTS AND LETTERS, AND OUR NAME, OUR SEALS, OR OUR INSIGNIA ARE NOT UNDER ANY CIRCUMSTANCES TO BE USED IN ADVERTISING TO THE GENERAL PUBLIC.

TESTING SERVICES, INC.
817 SHOWALTER AVE., PO BOX 2041
DALTON, GA 30722-2041
PHONE: (706)226-1400 FAX: (706)226-6118

Client: Airfield Systems
8028 North May Avenue Suite 201
Oklahoma City, OK 73120

Test: ASTM F1292: Impact Attenuation of Surface Systems in and Around Playground Equipment

Turf ID	ATS Turf 69sl/st	Top
Infill	None	
Underlayment:	4 oz Filter Fabric	
Grid:	AirDrain	
Underlayment:	1 1/8" PolyGreen Foam	
Sub Base:	Concrete	Bottom

Conditions:	Hot	Min 8 hrs @ 120°F	Report #:	62531	Page #	4 of 4
Date Tested:	8-Dec-14		Fall Height:	6'	Lab #	2669-1901

Drop Area: **Center of Assembly**

Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC
1	19.6	4	6'	5.97	127	685
2	19.6	5	6'	5.97	130	687
3	19.6	6	6'	5.97	136	743
Average			Drops 2, 3		133	715

Quadrant of Assembly

Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC
1	19.6	6	6'	5.97	131	699
2	19.7	4	6'	6.03	142	768
3	19.6	3	6'	5.97	139	739
Average			Drops 2, 3		141	754

Quadrant of Assembly

Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC
1	19.6	7	6'	5.97	142	784
2	19.7	6	6'	6.03	129	693
3	19.6	4	6'	5.97	138	762
Average			Drops 2, 3		134	728

Quadrant of Assembly

Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC
1	19.6	3	6'	5.97	132	685
2	19.7	4	6'	6.03	137	729
3	19.7	3	6'	6.03	139	756
Average			Drops 2, 3		138	743

Overall gmax (4 Locations, Three Drops Each Location in Same Spot) 137
Overall HIC (4 Locations, Three Drops Each Location in Same Spot) 735

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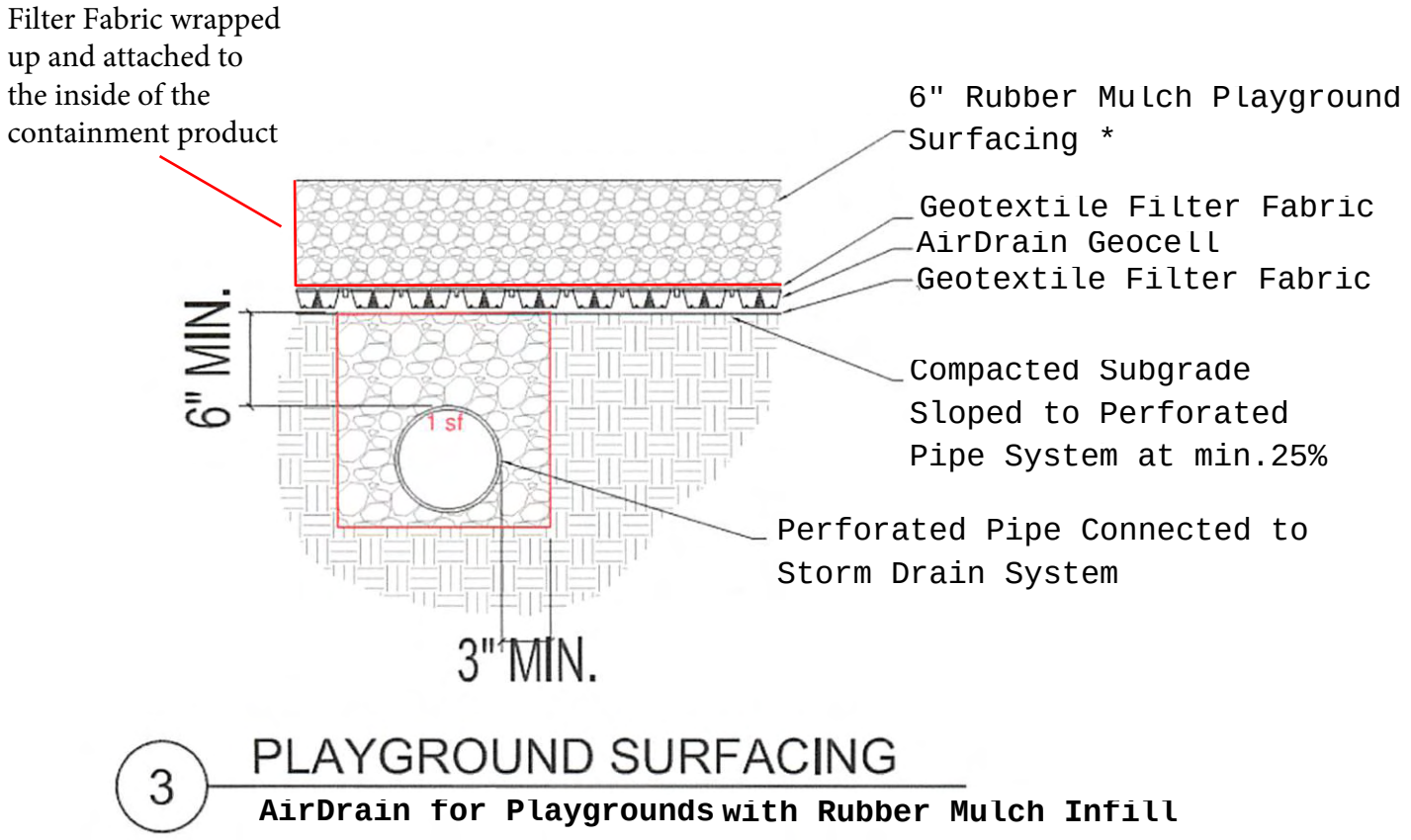


3 PLAYGROUND SURFACING

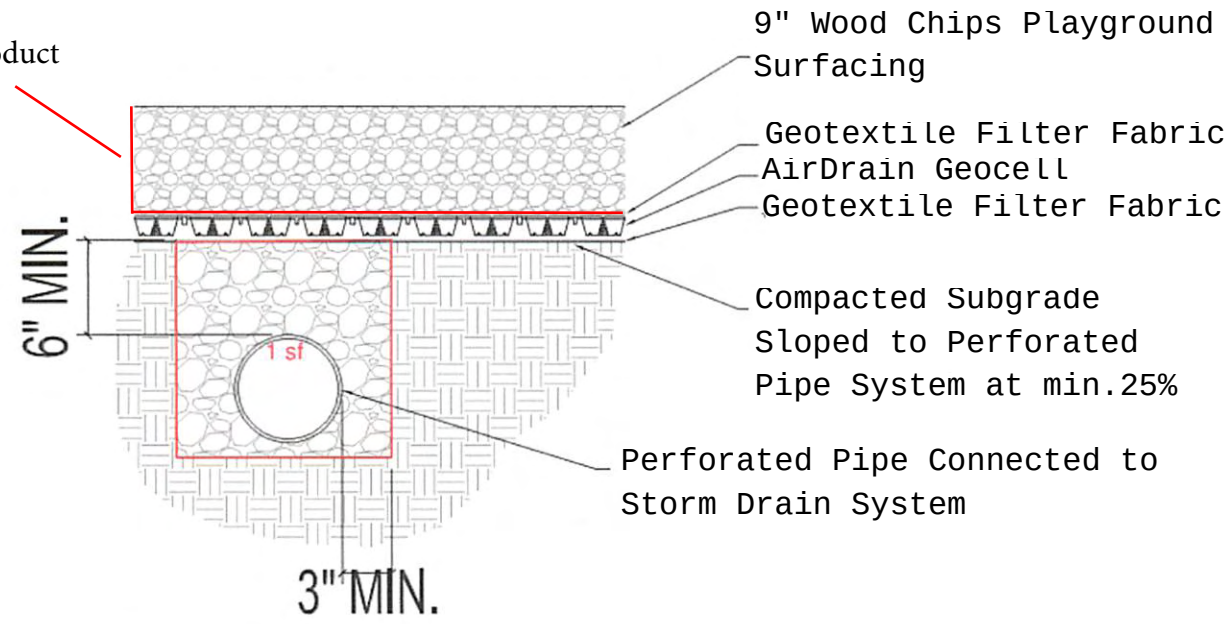
AirDrain for Playgrounds with Rubber Mulch Infill

** Compacted at 3" and Again at 6" during installation

Unit Panel Specifications:
Size: 32" x 32" x 1"
Weight: 3.1 lb
Strength: 233 psi (unfilled)
6747 psi (filled)
Resin: 100% Recycled (PIR)
Copolymer with Impact Modifier
"No Break" Polymer Material
Color: Black
(3% carbon black added for UV Protection)

AirField Systems, LLC
8028 N May Ave, Suite 201
Oklahoma City, OK 73120
www.AirFieldsystems.com
(405)359-3375

Filter Fabric wrapped up and attached to the inside of the containment product



3 PLAYGROUND SURFACING

AirDrain for Playgrounds with Wood Chips Infill

Unit Panel Specifications:
Size: 32" x 32" x 1"
Weight: 3.1 lb
Strength: 233 psi (unfilled)
6747 psi (filled)
Resin: 100% Recycled (PIR)
Copolymer with Impact Modifier
"No Break" Polymer Material
Color: Black
(3% carbon black added for UV Protection)

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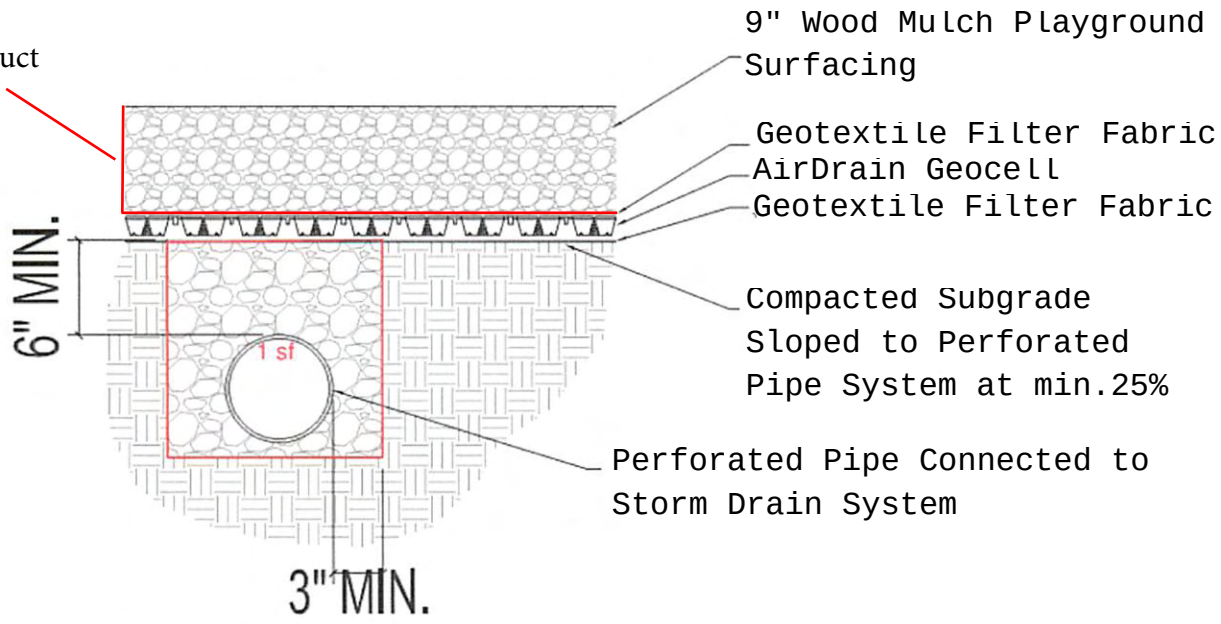
Filter Fabric wrapped up and attached to the inside of the containment product



3 PLAYGROUND SURFACING

AirDrain for Playgrounds with Wood Mulch Infill

Unit Panel Specifications:
Size: 32" x 32" x 1"
Weight: 3.1 lb
Strength: 233 psi (unfilled)
6747 psi (filled)
Resin: 100% Recycled (PIR)
Copolymer with Impact Modifier
"No Break" Polymer Material
Color: Black
(3% carbon black added for UV Protection)

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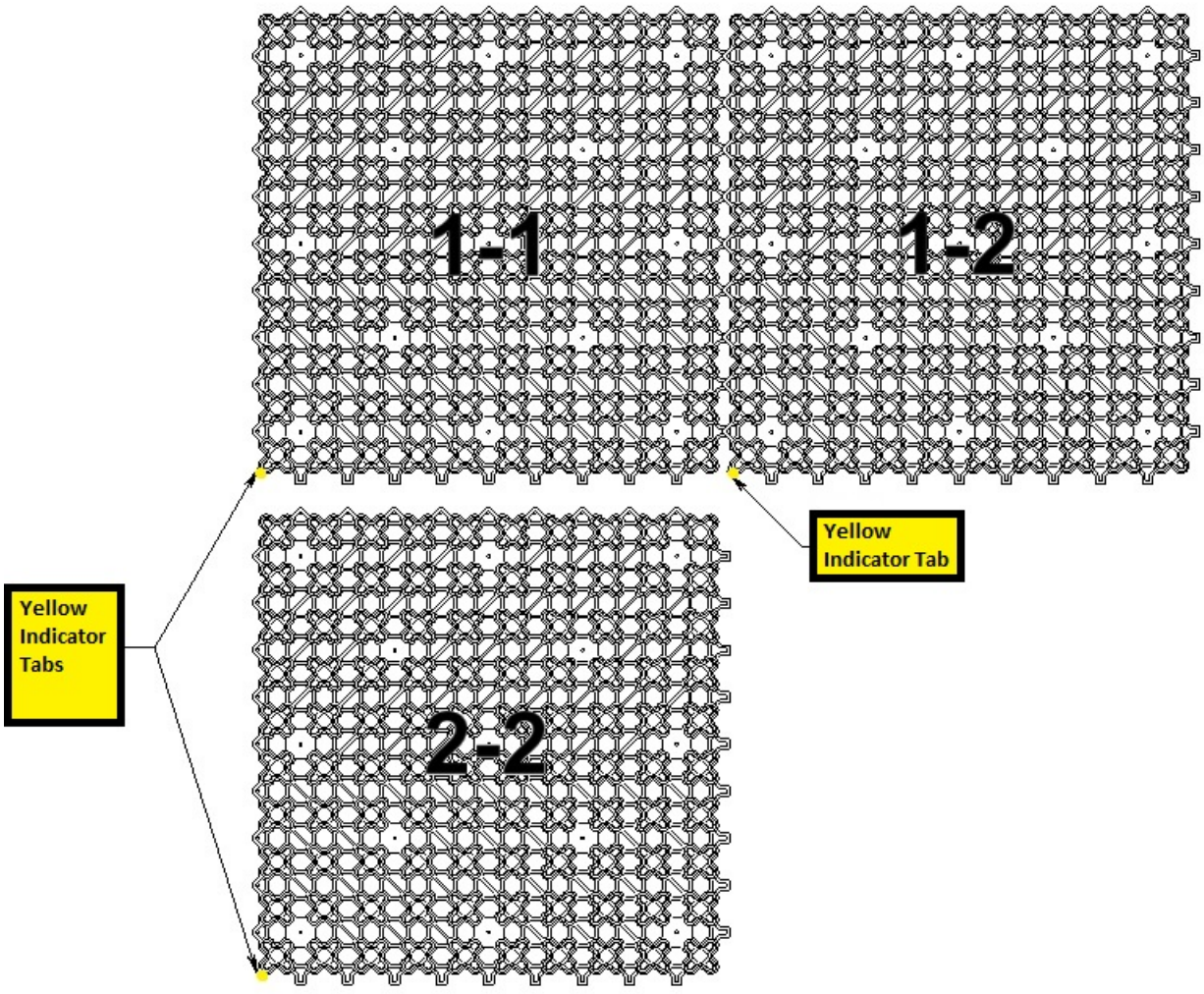
Proper Sequencing and Orientation of AirDrain GeoCell Panels for Rapid Installation

Pallet Staging: AirDrain pallets cover approximately 798sqft. per pallet and should be staged accordingly within the installation area so that you minimize the amount of time to stage the AirDrain grid along the install lines across the project. Typically placing the AirDrain every 65 feet across and 15-20 feet back from each other. (Call AirField with questions that you might have about proper staging and installation.)

All Installations must start in the Top Left Corner of the Field and work Left to Right to be installed properly.

1. Orientate the AirDrain GeoCell materials with the integral indicator tab to the panel's bottom left corner (painted yellow). **Install the AirDrain units by placing units with the connectors and platforms up creating a flat surface for the profile above. If the male connectors do not fall or drop into the female connectors then the orientation is incorrect, please call AirField Systems Immediately at 405-359-3775.**



2. Install the AirDrain panels across the field in a rowed pattern. Staggering of rows will allow for multiple row completion by a multi-manned crew.

3. Once the first row has progressed across the project, start with a second row. Have a person staging the panels in groups of three snapped together along the row. The crew can then install the left side of the panel while elevating slightly the top portion (so the male and female connectors don't touch each other). Once the left side has been snapped with a pull along the row direction, the top portion should fall into place and with a bottom vertical pull holding the inside of parts 1 & 3 snap all three parts in place.

4. AirDrain panels can be shaped to individual field areas as needed with appropriate cutting device. If a typical field is installed correctly there should only be two sides that would need to be trimmed.

   A. If only a few parts need to be trimmed, use tin snips.

   B. If many parts require trimming, set up a table and use a circular saw with a no melt, plastic cutting saw blade.

Visit AirField Systems Flickr page to watch a video of a 74,000 sq ft project for Chesapeake Energy illustrating a 3 man crew installation.

DISCLAIMER: The preceding and following drawings and/or general installation guidelines are provided only to show a concept design for installation and are not instructions for any particular installation. These drawings and general instructions are not complete and are provided only to assist a licensed Geo-Technical Engineer, a Landscape Architect and/or Civil Engineer in preparing actual construction and installation plans. These drawings and instructions must be reviewed by a licensed Geo-Technical Engineer, a Landscape Architect and/or Civil Engineer and adapted to the condition of a particular installation site and to comply with all state and local requirements for each installation site. THESE DRAWINGS AND/OR GENERAL INSTRUCTIONS DO NOT MODIFY OR SUPPLEMENT ANY EXPRESS OR IMPLIED WARRANTIES INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, IF APPLICABLE RELATING TO THE PRODUCT.

General Information	
General	
Construction	Injection Molded Copolymer
Composition	Copolymer Polypropylene Using an Impact Modifier
Dimensions	31.784” x 31.880” x 1.000” (7.03 sq ft.)
Unit Weight	3.1 lbs.
Material	Resin Pellets
Shipping	
Parts Per Pallet	114
Pallet Dimensions	33” x 33” x 48”
Pallet Weight	390 lbs.
Area Coverage Per Pallet	798 sq. ft.
Pallets Per Trailer	114 (3 wide x 2 tall x 19 deep)
Area Covered Per Trailer	90,972 sq. ft.

ASTM and ISO Properties [1]		
Physical	Nominal Value	Test Method
Specific Gravity	0.940	ASTM D792
Melt Mass-Flow Rate (230°C/2.16 kg)	20 g/10 min	ASTM D1238
Mechanical	Nominal Value	Test Method
Density	57.490 lb/ft^3	ASTM D1505
Tensile Strength (Yield, 73°F)	2,145 psi	ASTM D638
Tensile Elongation (Yield, 73°F)	16%	ASTM D638
Flexural Modulus (73°F)	100,175 psi	ASTM D790
Compression Strength (73°F)	**233 psi unfilled**	**ASTM D6254**
Impact	Nominal Value	Test Method
Notched Izod Impact (73°F, 0.125 in)		ASTM D256
Thermal	Nominal Value	Test Method
Deflection Temperature Under Load 264 psi, Unannealed	160°F	ASTM D648

Expansion/Contraction Index[1]			
Temperature	Humidity	Length	Width
100°F	98%	31.881”	31.817”
-5°F	0%	31.765”	31.713”
Change		.116”	.104”
Joint Expansion/Contraction Capacity		.420”	.572”
Safety Factor		362%	550%

Examples of Usage		
Application	Required Strength	Safety Factor
Auto	40 psi	x 168
Truck	110 psi	x 61

[1] Independent laboratory testing conducted by TRI/Environmental, Inc., TSI/Testing Services, Inc. and Wassenaar.

100% Post Manufactured Content

Recycled

The **AirDrain** GeoGrid is made of 100% post-manufactured material, so you can feel good about helping the planet while adding valuable LEED Points to your project. We also add an impact modifier for incredible strength and superior performance in extreme heat and cold - on top of the already durable **AirDrain** design.

AirDrain Co-Polymer with an Impact Modifier Performance and Temperature Durability

Attached you will find the specification of the resin used to produce both the 32 x 32 and the 32 x 18 Geo cells. This material is a co-polymer polypropylene that is 100% recycled resin. In order to be able to produce a consistent recycled resin a PIR (post industrial resin) is used for the base resin. This is the only way to produce a consistent material as opposed to a PCR (post consumer resin) which is dependent on the consumer to supply a consistent material. Using the PIR as a base resin 3% carbon black is added to insure good UV stabilization and metallocene (an ethylene base material) is used as an impact modifier.

Impact Modifier

The impact modifier is added in an amount to achieve a 10.0 Notched Izod Impact which comfortably qualifies this material as a NO BREAK material (4.0 and greater are normally considered no break material). The **AirDrain** resin offers an advantage over many ethylene and HDPE products since the **AirDrain** resin is often superior when it comes to pliability, warping and internal stress related issues. Referring to the attached specification sheet you will notice that all testing is done to specific ASTM Standards.

Resin Blends

AirDrain's blend of resins gives it the ability to perform in extreme temperatures. **AirDrain** does not need a temperature above 50 degrees Fahrenheit to be installed or warmed in the sun to be pliable on site for install. In addition, **AirDrain's** unique resin blend also helps prevent breakage and cracking in extreme temperatures. Giving it the ability to withstand repeated freeze thaw cycles.

Airfield posts its resin content and performance values with ASTM test methods and guide lines to measure the properties of our grid.