



TESTING SERVICES, INC.
 817 SHOWALTER AVE. • P.O. BOX 2041
 DALTON, GEORGIA 30722-2041
 PHONE: (706) 226-1400 • FAX: (706) 226-6118



TEST REPORT

CLIENT:	XGrass	REPORT NUMBER:	45040
	PO Box 579	LAB TEST NUMBER:	2061-7692
	Rocky Face, GA 30740	DATE:	June 12, 2009

Test Material: 60 Oz Synthetic Turf

Infill System: 3.0 lbs/ft² STF

Pad System: 2" Playground Pad

Sub Base: 3" Rock

Date of Receipt: June 8, 2009

Testing Period: June 9-10, 2009

Authorization: Ron Bennett

Test Requested: The submitted sample was evaluated for Shock Absorbing Properties in Accordance with the procedures outlined in *ASTM F 1292-04, Standard Specification for Impact Attenuation of Surface Systems Under and Around Playground Equipment*. A deviation to this standard was made at the request of the client who instructed TSi to substitute the above listed sub-base in place of concrete to comply with the client's installation protocol.

Test Results: Continued on the following pages ...

Prepared and signed by:

Erle Miles, Jr VP
 Testing Services Inc



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Report #: 45040
 Date: 6/12/09
 Page: 2 of 5

Client: XGrass
 PO Box 579
 Rocky Face, GA 30740

Results:

Sample: 60 Oz Synthetic Turf -- 3.0 lbs/ft² STF Infill -- 2" Playground Pad -- 3" Rock

Tested Dimension: 18" X 18"

Test Procedure: ASTM F 1292-04

Impact Location: Center of Test Material

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

Test Equipment: Triax 2000 Surface Impactor
 Date of Last Calibration: 2/19/09 by Alpha Automation

Sample Pre-Condition: 50±10% RH, 72F±5F for a minimum of 24 hrs prior to testing

Sample Conditioning: 8 hrs @ each reference temperatures prior to testing

<u>Temperature:</u>	<u>Maximum Drop Height That Gives a G_{max} of 200 or Less and a HIC of 1000 or less</u>
Ambient, 72°F (23°C)	10'
Hot, 120°F (49°C)	9'
Cold, 25°F (-6°C)	9'

Critical Fall Height (CFH):	9'
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Reference G_{max} Curves Included



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Report#: 45040
Date: 6/12/09
Page: 3 of 5

Client: XGrass
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Results

Temperature: 72°F (23°C)

Sample Condition: Dry

Drop #	Velocity ft/sec	Angle°	Drop Ht. / Actual	Drop Ht. / Theoretical	Gmax	HIC
1	24.1	4	9'	9.03'	123	731
2	24.1	2	9'	9.03'	129	777
3	24.1	1	9'	9.03'	128	761
Average			Drops 2,3		129	769

Drop #	Velocity ft/sec	Angle°	Drop Ht. / Actual	Drop Ht. / Theoretical	Gmax	HIC
1	25.5	3	10'	10.11'	121	737
2	25.5	2	10'	10.11'	128	818
3	25.6	4	10'	10.18'	130	813
Average			Drops 2,3		129	816

Drop #	Velocity ft/sec	Angle°	Drop Ht. / Actual	Drop Ht. / Theoretical	Gmax	HIC
1	26.7	3	11'	11.08'	135	865
2	26.7	0	11'	11.08'	180	1093
3	26.7	5	11'	11.08'	153	1070
Average			Drops 2,3		167	1082



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Report#: 45040
 Date: 6/12/09
 Page: 4 of 5

Client: XGrass
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Results

Temperature: 120°F (49°C)

Sample Condition: Dry

Drop #	Velocity ft/sec	Angle°	Drop Ht. / Actual	Drop Ht. / Theoretical	Gmax	HIC
1	22.7	4	8'	8.01'	113	600
2	22.7	3	8'	8.01'	124	701
3	22.7	2	8'	8.01'	130	752
Average			Drops 2,3		127	727

Drop #	Velocity ft/sec	Angle°	Drop Ht. / Actual	Drop Ht. / Theoretical	Gmax	HIC
1	24.2	2	9'	9.10'	153	906
2	24.2	0	9'	9.10'	146	919
3	24.2	3	9'	9.10'	145	931
Average			Drops 2,3		146	925

Drop #	Velocity ft/sec	Angle°	Drop Ht. / Actual	Drop Ht. / Theoretical	Gmax	HIC
1	25.3	6	10'	9.95'	173	1245
2	25.3	2	10'	9.95'	173	1199
3	25.3	4	10'	9.95'	174	1255
Average			Drops 2,3		174	1227



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Report#: 45040
 Date: 6/12/09
 Page: 5 of 5

Client: XGrass
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Results

Temperature: 25°F (-6°C)

Sample Condition: Frozen

Drop #	Velocity ft/sec	Angle°	Drop Ht. / Actual	Drop Ht. / Theoretical	Gmax	HIC
1	22.8	6	8'	8.08'	115	680
2	22.9	0	8'	8.15'	113	627
3	22.9	5	8'	8.15'	120	675
Average			Drops 2,3		117	651

Drop #	Velocity ft/sec	Angle°	Drop Ht. / Actual	Drop Ht. / Theoretical	Gmax	HIC
1	24.1	5	9'	9.03'	121	779
2	24.1	1	9'	9.03'	128	804
3	24.2	4	9'	9.10'	128	792
Average			Drops 2,3		128	798

Drop #	Velocity ft/sec	Angle°	Drop Ht. / Actual	Drop Ht. / Theoretical	Gmax	HIC
1	25.4	8	10'	10.03'	142	1046
2	25.4	3	10'	10.03'	150	1059
3	25.4	4	10'	10.03'	136	952
Average			Drops 2,3		143	1006