



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:	45039
	PO Box 579	LAB TEST NUMBER:	2061-7691
	Rocky Face, GA 30740	DATE:	June 12, 2009

Test Material: 60 Oz Synthetic Turf

Infill System: 3.0 lbs/ft² STF

Pad System: 1" 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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Client: XGrass
 PO Box 579
 Rocky Face, GA 30740

Results:

Sample: 60 Oz Synthetic Turf -- 3.0 lbs/ft² STF Infill -- 1" 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)	7'
Hot, 120°F (49°C)	7'
Cold, 25°F (-6°C)	6'
Critical Fall Height (CFH):	6'

Reference G_{max} Curves Included



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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	19.8	0	6'	6.09'	140	690
2	19.8	3	6'	6.09'	157	831
3	19.9	2	6'	6.15'	160	844
Average			Drops 2,3		159	838

Drop #	Velocity ft/sec	Angle°	Drop Ht. / Actual	Drop Ht. / Theoretical	Gmax	HIC
1	21.3	0	7'	7.05'	162	890
2	21.3	2	7'	7.05'	159	865
3	21.3	6	7'	7.05'	160	843
Average			Drops 2,3		160	854

Drop #	Velocity ft/sec	Angle°	Drop Ht. / Actual	Drop Ht. / Theoretical	Gmax	HIC
1	22.8	1	8'	8.08'	201	1266
2	22.8	1	8'	8.08'	206	1343
3	22.8	6	8'	8.08'	209	1410
Average			Drops 2,3		208	1377



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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	19.7	0	6'	6.03'	168	883
2	19.7	0	6'	6.03'	159	813
3	19.8	3	6'	6.09'	164	867
Average			Drops 2,3		162	840

Drop #	Velocity ft/sec	Angle°	Drop Ht. / Actual	Drop Ht. / Theoretical	Gmax	HIC
1	21.3	0	7'	7.05'	136	710
2	21.4	9	7'	7.12'	164	937
3	21.4	5	7'	7.12'	158	925
Average			Drops 2,3		161	931

Drop #	Velocity ft/sec	Angle°	Drop Ht. / Actual	Drop Ht. / Theoretical	Gmax	HIC
1	22.8	4	8'	8.08'	175	1109
2	22.9	1	8'	8.15'	180	1154
3	22.9	3	8'	8.15'	181	1125
Average			Drops 2,3		181	1140



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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	18.2	5	5'	5.15'	123	535
2	18.2	4	5'	5.15'	133	604
3	18.2	5	5'	5.15'	138	642
Average			Drops 2,3		136	623

Drop #	Velocity ft/sec	Angle°	Drop Ht. / Actual	Drop Ht. / Theoretical	Gmax	HIC
1	19.9	0	6'	6.15'	147	745
2	19.9	2	6'	6.15'	159	856
3	19.2	2	6'	5.73'	153	784
Average			Drops 2,3		156	820

Drop #	Velocity ft/sec	Angle°	Drop Ht. / Actual	Drop Ht. / Theoretical	Gmax	HIC
1	21.3	2	7'	7.05'	181	1073
2	21.3	3	7'	7.05'	181	1052
3	21.3	5	7'	7.05'	183	1055
Average			Drops 2,3		182	1054