



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:	45041
	PO Box 579	LAB TEST NUMBER:	2061-7693
	Rocky Face, GA 30740	DATE:	June 12, 2009

Test Material: 60 Oz Synthetic Turf

Infill System: 3.0 lbs/ft² STF

Pad System: 2" + 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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Client: XGrass
 PO Box 579
 Rocky Face, GA 30740

Results:

Sample: 60 Oz Synthetic Turf -- 3.0 lbs/ft² STF Infill -- 2" + 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)	14'
Hot, 120°F (49°C)	14'
Cold, 25°F (-6°C)	12'
Critical Fall Height (CFH):	12'

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	27.8	1	12'	12.01'	83	500
2	27.8	5	12'	12.01'	84	481
3	27.7	2	12'	11.92'	94	667
Average			Drops 2,3		89	574

Drop #	Velocity ft/sec	Angle°	Drop Ht. / Actual	Drop Ht. / Theoretical	Gmax	HIC
1	28.9	3	13'	12.98'	78	475
2	28.8	1	13'	12.89'	85	534
3	28.8	1	13'	12.89'	91	595
Average			Drops 2,3		88	565

Drop #	Velocity ft/sec	Angle°	Drop Ht. / Actual	Drop Ht. / Theoretical	Gmax	HIC
1	29.9	3	14'	13.89'	88	550
2	29.6	4	14'	13.62'	100	708
3	29.7	5	14'	13.71'	106	778
Average			Drops 2,3		103	743



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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	27.7	15	12'	11.92'	84	558
2	27.7	3	12'	11.92'	88	571
3	27.7	7	12'	11.92'	76	415
Average			Drops 2,3		82	493

Drop #	Velocity ft/sec	Angle°	Drop Ht. / Actual	Drop Ht. / Theoretical	Gmax	HIC
1	28.9	4	13'	12.98'	76	419
2	28.9	6	13'	12.98'	86	531
3	28.9	6	13'	12.98'	92	591
Average			Drops 2,3		89	561

Drop #	Velocity ft/sec	Angle°	Drop Ht. / Actual	Drop Ht. / Theoretical	Gmax	HIC
1	30.0	10	14'	13.99'	99	735
2	30.0	8	14'	13.99'	106	811
3	30.1	8	14'	14.08'	110	854
Average			Drops 2,3		108	833



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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	26.7	5	11'	11.08'	116	864
2	26.7	3	11'	11.08'	120	858
3	26.7	3	11'	11.08'	123	883
Average			Drops 2,3		122	871

Drop #	Velocity ft/sec	Angle°	Drop Ht. / Actual	Drop Ht. / Theoretical	Gmax	HIC
1	27.8	4	12'	12.01'	133	1079
2	27.8	5	12'	12.01'	126	1038
3	27.7	5	12'	11.92'	125	951
Average			Drops 2,3		126	995

Drop #	Velocity ft/sec	Angle°	Drop Ht. / Actual	Drop Ht. / Theoretical	Gmax	HIC
1	28.8	9	13'	12.89'	142	1281
2	28.8	5	13'	12.89'	129	1029
3	28.9	4	13'	12.98'	132	1059
Average			Drops 2,3		131	1044