



**TESTING SERVICES, INC.**  
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## TEST REPORT

CLIENT:	X-Grass	REPORT NUMBER:	54357
	PO Box 579	LAB TEST NUMBER:	2418-1480
	Rocky Face, GA 30740	DATE:	February 22, 2012
		PAGE:	1 of 2

Test Material: 2.5" Bonded Rubber

Tested Dimension: 18" x 18"

Sub Base: Concrete

Impact Location: Center of Test Material

Date of Receipt: February 9, 2012

Testing Period: February 14--22, 2012

Authorization: Lynette Ogle

Test Procedure: The submitted sample was evaluated for Shock Absorbing Properties in Accordance with the procedures outlined in ASTM F 1292-09; Standard Specification for Impact Attenuation of Surface Systems Under and Around Playground Equipment.

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

Test Equipment: Triax 2000 Surface Impactor  
 Date of Last Calibration: 3/21/2011 by Alpha Automation

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

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

Temperature: Maximum Drop Height That Gives a Gmax of 200 or Less and A HIC of 1000 or less

Ambient, 72°F (23°C) 6'

Hot, 120°F (49°C) 6'

Cold, 25°F (-6°C) 6'

<b>Critical Fall Height (CFH):</b>	<b>6'</b>
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Prepared and signed by:

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 Erle Miles, Jr. VP  
 Testing Services Inc.



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AMBIENT Sample Condition: Dry Temperature: 70°F (23°C)	Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC
	1	18.1	7	5'	5.09	126	647
	2	18.2	9	5'	5.15	128	664
	3	18.1	6	5'	5.09	126	654
	<b>Average</b>			<b>Drops 2, 3</b>		<b>127</b>	<b>659</b>
	Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC
	1	19.8	9	6'	6.09	147	896
	2	19.8	9	6'	6.09	147	901
	3	19.8	5	6'	6.09	149	923
	<b>Average</b>			<b>Drops 2, 3</b>		<b>148</b>	<b>912</b>
	Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC
	1	21.3	8	7'	7.05	168	1166
2	21.3	3	7'	7.05	164	1130	
3	21.3	3	7'	7.05	175	1248	
<b>Average</b>			<b>Drops 2, 3</b>		<b>170</b>	<b>1189</b>	

HOT Sample Condition: Dry Temperature: 120°F (49°C)	Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC
	1	18.1	4	5'	5.09	132	705
	2	18.1	8	5'	5.09	134	724
	3	18.1	6	5'	5.09	135	738
	<b>Average</b>			<b>Drops 2, 3</b>		<b>135</b>	<b>731</b>
	Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC
	1	19.8	6	6'	6.09	153	972
	2	19.8	7	6'	6.09	158	1021
	3	19.8	9	6'	6.09	152	957
	<b>Average</b>			<b>Drops 2, 3</b>		<b>155</b>	<b>989</b>
	Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC
	1	21.3	8	7'	7.05	181	1318
2	21.3	7	7'	7.05	179	1317	
3	21.3	6	7'	7.05	186	1371	
<b>Average</b>			<b>Drops 2, 3</b>		<b>183</b>	<b>1344</b>	

COLD Sample Condition: Dry Temperature: 25°F (-6°C)	Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC
	1	18.1	6	5'	5.09	140	785
	2	18.1	7	5'	5.09	144	801
	3	18.1	7	5'	5.09	145	818
	<b>Average</b>			<b>Drops 2, 3</b>		<b>145</b>	<b>810</b>
	Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC
	1	19.8	5	6'	6.09	154	949
	2	19.8	8	6'	6.09	152	935
	3	19.8	6	6'	6.09	160	994
	<b>Average</b>			<b>Drops 2, 3</b>		<b>156</b>	<b>965</b>
	Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC
	1	21.3	4	7'	7.05	171	1177
2	21.3	7	7'	7.05	170	1156	
3	21.3	6	7'	7.05	171	1156	
<b>Average</b>			<b>Drops 2, 3</b>		<b>171</b>	<b>1156</b>	