



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



CLIENT:	Advanced Ground Care Products, LLC	REPORT NUMBER:	38099
	665 West Armory Drive	LAB TEST NUMBER:	1852-0632
	South Holland, IL 60473	DATE:	September 19, 2007

Test Material The following sample was submitted by the Client as: **EnduraSafe Nugget Mulch**

Sub Base: Concrete

Date of Receipt: August 20, 2007

Testing Period: September 13, 2007-September 18, 2007

Authorization: Cathy Bonfield

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.*

Test Results: Continued on the following pages ...

Prepared and signed by:

 Erle Miles, Jr VP
 Testing Services Inc



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Client: Advanced Ground Care Products, LLC
 665 Armory Drive
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Results:

Sample: EnduraSafe Nugget Mulch
Tested Dimension: 18" X 18" X 4" (Compacted Depth)
Test Procedure: ASTM F 1292-04
Impact Location: Center of Compacted Mulch
Missile: ANSI C Hemispherical Headform in Crown Position
 Total Drop Assembly Weight 4.6kg (10 lbs)
Test Equipment: Triax 2000 Surface Impactor
 Date of Last Calibration: 4/25/06 by Alpha Automation
Sample Pre-Condition: 50±10% RH, 72F±5F for a minimum of 24 hrs prior to testing
 Compacted 1,004 ± 32 lbs for 1 minute (18" X 18") Container

<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)	11'
Hot, 120°F (49°C)	9'
Cold, 25°F (-3.89°C)	10'
<u>Critical Fall Height (CFH):</u>	9'



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Client: Advanced Ground Care Products, LLC
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Results

Temperature: 72°F (23°C)

Actual @ Test: 71.1°F 59%

Sample Condition: Dry

Drop #	Velocity ft/sec	Angle°	Drop Ht. / Actual	Drop Ht. / Theoretical	Gmax	HIC
1	25.7	5	10'	10.26'	141	840
2	25.7	10	10'	10.26'	139	813
3	25.7	6	10'	10.26'	140	842
Average			Drops 2,3		140	828

Drop #	Velocity ft/sec	Angle°	Drop Ht. / Actual	Drop Ht. / Theoretical	Gmax	HIC
1	26.8	5	11'	11.16'	149	984
2	26.8	0	11'	11.16'	155	999
3	26.8	0	11'	11.16'	149	903
Average			Drops 2,3		152	951

Drop #	Velocity ft/sec	Angle°	Drop Ht. / Actual	Drop Ht. / Theoretical	Gmax	HIC
1	28.0	4	12'	12.18'	164	1126
2	28.0	7	12'	12.18'	166	1169
3	28.1	10	12'	12.27'	178	1247
Average			Drops 2,3		172	1208



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Client: Advanced Ground Care Products, LLC
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Results

Temperature: 120°F (49°C)

Actual @ Test: 118°F

Sample Condition: Dry

Drop #	Velocity ft/sec	Angle°	Drop Ht. / Actual	Drop Ht. / Theoretical	Gmax	HIC
1	23.1	4	8'	8.29'	97	459
2	22.9	1	8'	8.15'	105	516
3	23.0	4	8'	8.22'	108	541
Average			Drops 2,3		107	529

Drop #	Velocity ft/sec	Angle°	Drop Ht. / Actual	Drop Ht. / Theoretical	Gmax	HIC
1	24.4	6	9'	9.25'	123	731
2	24.4	0	9'	9.25'	119	653
3	24.4	2	9'	9.25'	136	819
Average			Drops 2,3		128	736

Drop #	Velocity ft/sec	Angle°	Drop Ht. / Actual	Drop Ht. / Theoretical	Gmax	HIC
1	25.7	4	10'	10.26'	135	848
2	25.7	1	10'	10.26'	151	1009
3	25.6	0	10'	10.18'	152	1036
Average			Drops 2,3		152	1023



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Client: Advanced Ground Care Products, LLC
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Results

Temperature: 25°F (-6°C)

Actual @ Test: 29°F

Sample Condition: Frozen

Drop #	Velocity ft/sec	Angle°	Drop Ht. / Actual	Drop Ht. / Theoretical	Gmax	HIC
1	24.4	3	9'	9.25'	120	633
2	24.4	3	9'	9.25'	119	605
3	24.4	3	9'	9.25'	138	811
Average			Drops 2,3		129	708

Drop #	Velocity ft/sec	Angle°	Drop Ht. / Actual	Drop Ht. / Theoretical	Gmax	HIC
1	25.7	6	10'	10.26'	157	1006
2	25.7	1	10'	10.26'	144	838
3	25.7	7	10'	10.26'	144	823
Average			Drops 2,3		144	831

Drop #	Velocity ft/sec	Angle°	Drop Ht. / Actual	Drop Ht. / Theoretical	Gmax	HIC
1	26.8	10	11'	11.16'	138	848
2	26.8	6	11'	11.16'	160	1078
3	26.9	3	11'	11.25'	157	1024
Average			Drops 2,3		159	1051

END OF REPORT