



<b>CLIENT:</b>	Advanced Ground Care Products, LLC	<b>REPORT NUMBER:</b>	38100
	665 West Armory Drive	<b>LAB TEST NUMBER:</b>	1852-0633
	South Holland, IL 60473	<b>DATE:</b>	September 20, 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:

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 Erle Miles, Jr VP  
 Testing Services Inc



**TESTING SERVICES, INC.**  
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**Client:** Advanced Ground Care Products, LLC  
 665 Armory Drive  
 South Holland, IL 60473

**Results:**

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**Sample:** EnduraSafe Nugget Mulch  
**Tested Dimension:** 18" X 18" X 6" (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<sub>max</sub> of 200 or Less and a HIC of 1000 or less</u>
Ambient, 72°F (23°C)	15'
Hot, 120°F (49°C)	15'
Cold, 25°F (-3.89°C)	15'
<b><u>Critical Fall Height (CFH):</u></b>	15'



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Results

Temperature: 72°F (23°C)

Actual @ Test: 71.7°F 62%

Sample Condition: Dry

Drop #	Velocity ft/sec	Angle°	Drop Ht. / Actual	Drop Ht. / Theoretical	Gmax	HIC
1	30.2	9	14'	14.17'	127	878
2	30.2	9	14'	14.17'	118	777
3	30.3	10	14'	14.27'	132	976
<b>Average</b>			<b>Drops 2,3</b>		<b>125</b>	<b>877</b>

Drop #	Velocity ft/sec	Angle°	Drop Ht. / Actual	Drop Ht. / Theoretical	Gmax	HIC
1	31.1	9	15'	15.03'	115	760
2	31.1	10	15'	15.03'	126	900
3	31.2	10	15'	15.13'	124	853
<b>Average</b>			<b>Drops 2,3</b>		<b>125</b>	<b>877</b>

Drop #	Velocity ft/sec	Angle°	Drop Ht. / Actual	Drop Ht. / Theoretical	Gmax	HIC
1	N/A	N/A	16'	N/A	N/A	N/A
2	N/A	N/A	16'	N/A	N/A	N/A
3	N/A	N/A	16'	N/A	N/A	N/A
<b>Average</b>			<b>Drops 2,3</b>		<b>*N/A</b>	<b>*N/A</b>

\*Test Data Not Available due to excessive height limitation of Test Equipment above 15'.



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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	30.3	1	14'	14.27'	117	780
2	30.2	3	14'	14.17'	111	673
3	30.2	6	14'	14.17'	118	761
<b>Average</b>			<b>Drops 2,3</b>		<b>115</b>	<b>717</b>

Drop #	Velocity ft/sec	Angle°	Drop Ht. / Actual	Drop Ht. / Theoretical	Gmax	HIC
1	31.2	9	15'	15.13'	124	901
2	31.1	10	15'	15.03'	130	945
3	31.1	9	15'	15.03'	119	833
<b>Average</b>			<b>Drops 2,3</b>		<b>125</b>	<b>889</b>

Drop #	Velocity ft/sec	Angle°	Drop Ht. / Actual	Drop Ht. / Theoretical	Gmax	HIC
1	N/A	N/A	16'	N/A	N/A	N/A
2	N/A	N/A	16'	N/A	N/A	N/A
3	N/A	N/A	16'	N/A	N/A	N/A
<b>Average</b>			<b>Drops 2,3</b>		<b>*N/A</b>	<b>*N/A</b>

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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	30.2	9	14'	14.17'	120	776
2	30.2	10	14'	14.17'	119	814
3	30.2	9	14'	14.17'	110	678
<b>Average</b>			<b>Drops 2,3</b>		<b>115</b>	<b>746</b>

Drop #	Velocity ft/sec	Angle°	Drop Ht. / Actual	Drop Ht. / Theoretical	Gmax	HIC
1	31.2	4	15'	15.13'	125	861
2	31.1	5	15'	15.03'	116	789
3	30.9	10	15'	14.84'	120	805
<b>Average</b>			<b>Drops 2,3</b>		<b>118</b>	<b>797</b>

Drop #	Velocity ft/sec	Angle°	Drop Ht. / Actual	Drop Ht. / Theoretical	Gmax	HIC
1	N/A	N/A	16'	N/A	N/A	N/A
2	N/A	N/A	16'	N/A	N/A	N/A
3	N/A	N/A	16'	N/A	N/A	N/A
<b>Average</b>			<b>Drops 2,3</b>		<b>*N/A</b>	<b>*N/A</b>

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END OF REPORT