



TESTING SERVICES, INC.
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TEST REPORT

CLIENT:	Robertson Industries	REPORT NUMBER:	47835
	4401 E. Baseline Road Suite 105	LAB TEST NUMBER:	2143-2021
	Phoenix, AZ 85042	DATE:	April 23, 2010
		PAGE:	1 of 2

Product Description: 3.5" TT Classic

Tested Dimension: 18" x 18" X 3.5"

Sub Base: Concrete

Impact Location: Center of Test Material

Date of Receipt: March 15, 2010

Testing Period: 3/31/2010-4/7/2010

Authorization: Steve Scaturro

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: 3/24/2010 by Alpha Automation

Sample Pre-Condition: 50±10 RH, 7sF±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)	8'
Hot, 120°F (49°C)	7'
Cold, 25°F (-6°C)	8'

Critical Fall Height (CFH):	7'
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Reference Gmax Curves Included

Prepared and signed by:

 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	21.3	1	7'	7.05	121	726	
	2	21.3	1	7'	7.05	129	787	
	3	21.3	1	7'	7.05	131	788	
	Average				Drops 2, 3		130	788
	Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC	
	1	22.7	1	8'	8.01	132	867	
	2	22.8	1	8'	8.08	137	886	
	3	22.7	1	8'	8.01	138	910	
	Average				Drops 2, 3		138	898
	Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC	
	1	24.1	3	9'	9.03	153	1088	
2	24.2	2	9'	9.10	156	1113		
3	24.2	2	9'	9.10	162	1181		
Average				Drops 2, 3		159	1147	

HOT Sample Condition: Dry Temperature: 120°F (49°C)	Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC	
	1	19.8	0	6'	6.09	107	558	
	2	19.8	2	6'	6.09	109	578	
	3	19.8	1	6'	6.09	109	577	
	Average				Drops 2, 3		109	578
	Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC	
	1	21.4	0	7'	7.12	128	782	
	2	21.4	1	7'	7.12	131	802	
	3	21.4	0	7'	7.12	133	822	
	Average				Drops 2, 3		132	812
	Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC	
	1	22.8	3	8'	8.08	145	967	
2	22.8	4	8'	8.08	150	1019		
3	22.8	2	8'	8.08	153	1028		
Average				Drops 2, 3		152	1024	

COLD Sample Condition: Dry Temperature: 25°F (-6°C)	Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC	
	1	21.3	0	7'	7.05	125	763	
	2	21.4	2	7'	7.12	128	784	
	3	21.4	2	7'	7.12	133	826	
	Average				Drops 2, 3		131	805
	Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC	
	1	22.8	2	8'	8.08	135	835	
	2	22.8	4	8'	8.08	143	906	
	3	22.8	1	8'	8.08	143	905	
	Average				Drops 2, 3		143	906
	Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC	
	1	24.1	2	9'	9.03	148	1073	
2	24.1	1	9'	9.03	149	1063		
3	24.1	7	9'	9.03	158	1166		
Average				Drops 2, 3		154	1115	