



TEST REPORT

CLIENT:	Robertson Industries	REPORT NUMBER:	47833
	4401 E. Baseline Road Suite 105	LAB TEST NUMBER:	2143-2019
	Phoenix, AZ 85042	DATE:	April 23, 2010
		PAGE:	1 of 2

Product Description: 2.5" TT Classic

Tested Dimension: 18" x 18" X 2.5"

Sub Base: Concrete

Impact Location: Center of Test Material

Date of Receipt: March 15, 2010

Testing Period: 4/6/2010-4/14/2010

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) 6'

Hot, 120°F (49°C) 5'

Cold, 25°F (-6°C) 5'

Critical Fall Height (CFH):	5'
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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	18.0	0	5'	5.04	138	748	
	2	18.0	1	5'	5.04	138	752	
	3	18.0	1	5'	5.04	141	773	
	Average				Drops 2, 3		140	763
	Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC	
	1	19.8	3	6'	6.09	154	893	
	2	19.8	1	6'	6.09	160	937	
	3	19.8	0	6'	6.09	161	947	
	Average				Drops 2, 3		161	942
	Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC	
	1	21.3	2	7'	7.05	184	1288	
2	21.3	1	7'	7.05	199	1451		
3	21.3	0	7'	7.05	194	1377		
Average				Drops 2, 3		197	1414	

HOT Sample Condition: Dry Temperature: 120°F (49°C)	Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC	
	1	16.2	2	4'	4.08	118	556	
	2	16.3	7	4'	4.13	121	566	
	3	16.3	5	4'	4.13	123	579	
	Average				Drops 2, 3		122	573
	Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC	
	1	18.1	6	5'	5.09	147	787	
	2	18.1	6	5'	5.09	149	805	
	3	18.1	4	5'	5.09	149	795	
	Average				Drops 2, 3		149	800
	Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC	
	1	19.8	5	6'	6.09	177	1160	
2	19.8	1	6'	6.09	180	1180		
3	19.8	2	6'	6.09	180	1175		
Average				Drops 2, 3		180	1178	

COLD Sample Condition: Dry Temperature: 25°F (-6°C)	Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC	
	1	16.2	5	4'	4.08	103	421	
	2	16.3	5	4'	4.13	109	447	
	3	16.3	5	4'	4.13	109	450	
	Average				Drops 2, 3		109	449
	Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC	
	1	18.1	4	5'	5.09	134	703	
	2	18.2	4	5'	5.15	138	730	
	3	18.1	2	5'	5.09	135	713	
	Average				Drops 2, 3		137	722
	Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC	
	1	19.8	2	6'	6.09	159	969	
2	19.8	0	6'	6.09	168	1053		
3	19.8	4	6'	6.09	164	1006		
Average				Drops 2, 3		166	1030	