



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

CLIENT:	Robertson Industries	REPORT NUMBER:	47838A
	4401 E. Baseline Road Suite 105	LAB TEST NUMBER:	2143-2024
	Phoenix, AZ 85042	DATE:	April 23, 2010
		PAGE:	1 of 2

**Product Description:** 2.5" Supreme

**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:** 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) 6'

Hot, 120°F (49°C) 5'

Cold, 25°F (-6°C) 6'

<b>Critical Fall Height (CFH):</b>	5'
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Reference Gmax Curves Included

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	18.0	1	5'	5.04	131	660
	2	18.0	2	5'	5.04	134	686
	3	18.0	3	5'	5.04	139	713
	Average			Drops 2, 3		137	700
	Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC
	1	19.7	2	6'	6.03	156	903
	2	19.7	2	6'	6.03	157	896
	3	19.8	3	6'	6.09	165	978
	Average			Drops 2, 3		161	937
	Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC
	1	21.3	0	7'	7.05	175	1144
2	21.3	3	7'	7.05	187	1255	
3	21.3	2	7'	7.05	187	1267	
Average			Drops 2, 3		187	1261	

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	5	4'	5.09	134	671
	2	18.1	1	4'	5.09	140	705
	3	18.1	2	4'	5.09	142	717
	Average			Drops 2, 3		141	711
	Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC
	1	18.1	4	5'	5.09	142	734
	2	18.2	4	5'	5.15	143	744
	3	18.2	5	5'	5.15	144	745
	Average			Drops 2, 3		144	745
	Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC
	1	19.8	1	6'	6.09	163	993
2	19.8	4	6'	6.09	168	1041	
3	19.8	1	6'	6.09	174	1101	
Average			Drops 2, 3		171	1071	

COLD Sample Condition: Dry Temperature: 25°F (-6°C)	Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC
	1	18.0	5	5'	5.04	130	633
	2	18.0	1	5'	5.04	134	672
	3	18.1	5	5'	5.09	135	667
	Average			Drops 2, 3		135	670
	Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC
	1	19.7	3	6'	6.03	150	827
	2	19.8	2	6'	6.09	150	831
	3	19.7	0	6'	6.03	155	871
	Average			Drops 2, 3		153	851
	Drop #	Velocity ft/sec	Angle	Drop Ht/Actual	Drop Ht/Theoretical	Gmax	HIC
	1	21.3	2	7'	7.05	173	1108
2	21.3	3	7'	7.05	177	1123	
3	21.3	4	7'	7.05	184	1205	
Average			Drops 2, 3		181	1164	