Playground Impact Test and Surface Stability Report

Report No. [redacted]

[redacted]

[redacted]

[redacted]

[redacted]

Inspection Date: [redacted]

Report Date: [redacted]

Inspector(s): [redacted]

Prepared by Martin Brothers Consulting Services

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Email: playsafe@mbcserv.com

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Table of Contents

Executive Summary

Dear [redacted]

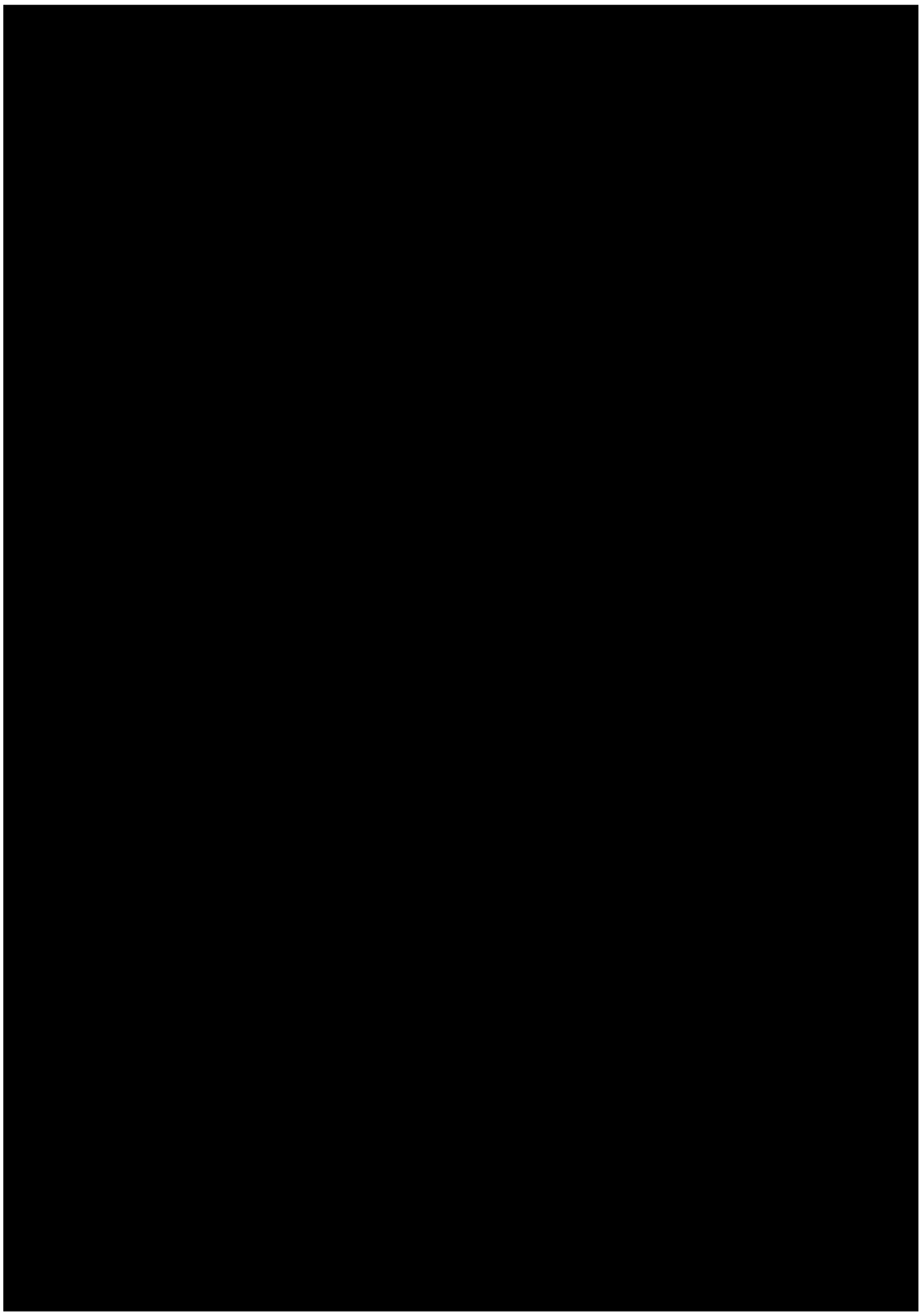
[redacted]

CPSI# 62702-1227

Certified Playground Safety Inspector

Play Element Inventory	#	Compliant	Non-Compliant	Not Available	Notes:
[redacted]	1	X			
	1	X			
	1	X			
	1	X			
	1	X			
	1	X			
	7	X			
	1	X			
	2	X			
	1	X			
	1	X			
	1	X			
	1	X			
	1	X			
	1			X	Not installed at time of inspection
	1	X			Not a play element, but a child could climb on top of it. Supervision of children is sufficient to avoid injury.

Brea Mall Playground Plans



Playground Impact and Surface Test Information Sheet

Client Information

Name: [redacted]

Role: [redacted]

Company: [redacted]

Address: [redacted]

Phone: ([redacted]

Website: [redacted]

Devices Used

Rotational Penetrometer

Test Procedure: ASTM F1951

Manufacturer: Beneficial Designs, Inc.

Model Number: RP 100 Series

Serial Number: [redacted]

Calibration Verification Date: [redacted]

TRIAX Touch Wireless Surface Impact Tester

Test Procedure: ASTM F 3313-19

Manufacturer: TRIAX Impact Testing Systems

Serial Number (Hand Held): [redacted]

Serial Number (E-Missile): [redacted]

Accelerometer: [redacted]

Serial Number (Reference Mat): [redacted]

Serial Number (Tripod): [redacted]

Calibration Verification Date: [redacted]

Surface Material

Surface Type: [redacted]

Surface Manufacturer: [redacted]

Surface Installer: [redacted]

SURFACE IMPACT TEST

Applicable Standards: CBC 2022 11B-1008.2.6.2, 2010 ADA 1008.2.6.2 Use Zones.

Ground surfaces located within use zones shall comply with ASTM F 1292

ASTM 1292-17a states that to calculate the results of the drop test, the first drop is to be omitted and the second and third drops averaged. The “G-Max” or peak is to be less than 200 and the HIC is to be less than 1000.

RESULTS

Martin Brothers Consulting Services has determined that the playground meets the requirements of CBC 2022 11B-1008.2.6.2, 2010 ADA 1008.2.6.2 Use Zones.

Certificate of Calibration Available Upon Request

This section includes ASTM F1292 Test Report, TRIAX Touch Impact System Data Report, and a breakdown of each drop location results.

Martin Brothers Consulting Services

ASTM F1292 Test Report

There shall be one report for each play structure or functional linked play structures and for each type of surface material. Each test shall compromise a minimum of 3 impact locations per playspace or type of surface material with three drops from the same height to the same point. The report shall be descriptive enough to assist the user of the report in determining compliance with contracts and Standards. The ASTM F3313-19, CSA Z614-20, AS/NZS4422-2016, CNSI12643-A1044 and CPSC doc 325 set minimum values as the Gmax shall not exceed 200 and the HIC shall not exceed 1000 from the drop height stipulated by the owner/operator prior to purchase.

Agency Requesting the Tests	**Playground Site**	**Manufacturer/Supplier/Installer of Surface**
Name: [redacted]	Name: [redacted]	Name: [redacted]
Address: [redacted]	Address: [redacted]	Address: [redacted]
City: [redacted]	City: [redacted]	City: [redacted]
State/Prov: [redacted]	State/Prov: [redacted]	State/Prov: [redacted]
Postal: [redacted]	Postal: [redacted]	Postal: [redacted]
Country: [redacted]	Country: [redacted]	Country: [redacted]
Contact Name: [redacted]	Contact Name: [redacted]	Contact Name: [redacted]
Contact Phone: [redacted]	Contact Phone: [redacted]	Contact Phone: [redacted]

Date of Test: [redacted]	Test Apparatus S/N:	**Hand Held:** [redacted]	**Missile:** [redacted]	**TriPod:** [redacted]	TriaxTouch				
Description of Surface(s): [redacted]									
Type:	Granulated Rubber	Product Name: [redacted]		Date Installed: [redacted]		Critical Height: [redacted]			
Thickness of Surface Material: [redacted]		Maximum: [redacted]		Minimum: [redacted]		Average: [redacted]			
Evenness (comment on wear patterns and disruption):	Even with no wear as this is a new surface								
Seams: Location:	None	Gaps and Condition:	None			Level Across Seams:	NA		
Fasteners:	None	Type:	Non			Condition:	None		
Weather Condition of Test: [redacted]		Frozen:	No	Dry:	Yes	Wet:	No		
Surface condition:	New surface. No wear or deterioration								
Temperature: Ambient Air (°F): [redacted]		Surface Temperature at the Lesser of 1" or 50% of the Depth of the Surface: [redacted]							
Reference Presets Drops Completed:	3	Gmax within 5% of nominal Gmax:	Yes						
Mats, Walkways, or Ramps:	None	Number:	NA	Condition:	NA	Requires Impact Test (Yes/No):	NA		
Pictures (file names): General Playground	See Each Drop					Test Locations:	As Directed by Client		

The drop height each test location shall be the greater of the critical height for the surface material, the fall height for the play structure as stated in the relevant playground Standard or the height specified by the owner/operator prior to purchase. The drop height is physically measured. The drops are performed from the same height to the same point on the surface.

The results herein reflect the performance of the tested playground surface at the time of testing and at the temperature(s) and ambient conditions reported. Performance will vary with temperature, moisture content and other factors

Test performed by: [redacted]	Authorization Signature: [redacted]

This form is used under a license between the person performing the test and Canadian Playground Advisory Inc. A list of licensed users can be viewed at www.playgroundadvisory.com and means their device is within calibration and their training is current.

Triax Touch Impact Test Report

TRIAX
IMPACT TESTING SYSTEMS

TRIAX TOUCH IMPACT TEST SYSTEM DATA REPORT
Report Date: 10/28/2025

No.	Peak	HIC	Feet	ANGLE	Date/Time	Comment
4	121	611	4'9"	9	[redacted]	Near North Portholes
5	123	619	4'8"	7		
6	123	620	4'8"	10		
7	102	405	3'5"	9		Between Igloo and Large Slide
8	105	421	3'4"	4		
9	106	426	3'5"	8		
10	137	717	4'9"	9		Near Rear(South) Portholes
11	142	756	4'9"	10		
12	144	761	4'9"	6		
13	90	316	3'1"	4		Near Large Slide and Climbing Rope
14	94	331	3'1"	6		
15	93	329	3'1"	10		
16	90	301	2'6"	5		Near Bench Top Counter
17	93	315	2'6"	9		
18	94	318	2'6"	7		

Brea Mall Playground

Drop Location #1 Near North Portholes

Surface Depth = [redacted]

Surface Temperature = [redacted]

Drop Location #1 drop No. [redacted] **results are as follows:**

Average Peak = [redacted]

Average HIC = [redacted]

The results are within ASTM 1292-17a criteria for drops from the height of [redacted]

Photo 8433

Comments: None

ROTATIONAL PENETROMETER TEST

Applicable Standards: CBC 2022 11B-1008.2.6.1, 2010 ADA 1008.2.6.1 Accessibility.

Ground surfaces shall comply with ASTM F 1951

ASTM 1292-17a states that to calculate the average results of rotational penetrometer test, the highest and lowest measurements are to be omitted.

RESULTS

Martin Brothers Consulting Services has determined that the playground meets the requirements of CBC 2022 11B-1008.2.6.1, 2010 ADA 1008.2.6.1 Accessibility.

Certificate of Calibration Available Upon Request

This section of the report includes the Evaluation Criteria, Rotational Penetrometer Information Sheet, Data Sheets, and Photo Pages.

Evaluation Criteria

Per the *Accessible Exterior Surfaces Technical Article* by the U.S. Architectural and Transportation Barriers Compliance Board, performance values of dry and wet surfaces are as follows:

Firmness (Dry and Wet Surfaces)

- **Firm Surface** - Less than or equal to 0.3 inch of displacement.
- **Moderately Firm Surface** - Greater than 0.3 inch, and less than or equal to 0.5 inch of displacement.
- **Not Firm Surface** - Greater than 0.5 inch of displacement.

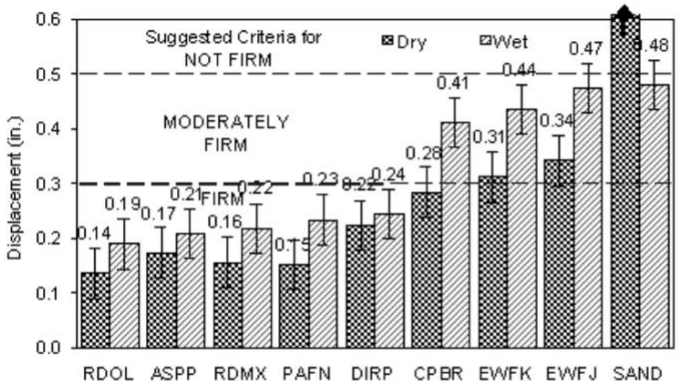


Figure 6. Rotational Penetrometer Firmness Measurements for Dry and Wet Surfaces

Playground Surfaces that are firm to moderately firm are compliant.

Stability (Dry and Wet Surfaces)

- **Stable Surface** - Less than or equal to 0.5 inch of displacement.
- **Moderately Stable Surface** - Greater than 0.5 inch, and less than or equal to 1.0 inch of displacement.
- **Not Stable Surface** - Greater than 1.0 inch of displacement.

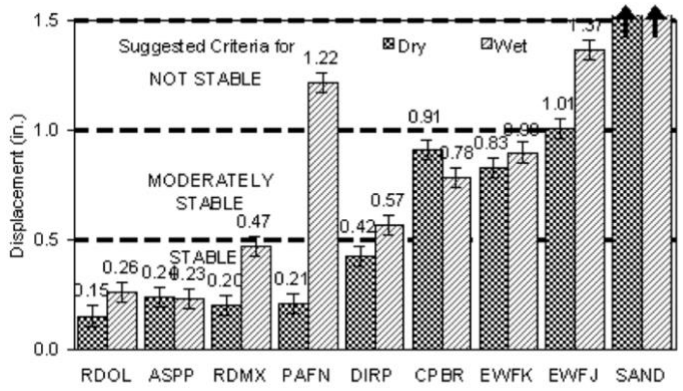


Figure 7. Rotational Penetrometer Stability Measurements for Dry and Wet Surfaces

Playground Surfaces that are stable to moderately stable are compliant.

Rotational Penetrometer Information Sheet

Test Location

Site Name: [redacted]
Email: [redacted]
Address: [redacted]
Phone: [redacted]
Contact: [redacted]

Test Date / Conditions

Date: [redacted]
Relative Humidity %: [redacted]
Presence of any moisture on the surface: None
Time: [redacted]
Dry / Wet: Dry
Temp ºF: [redacted]

Client Information

Company/Client: [redacted]
Contact: [redacted]
Address: [redacted]
Email: [redacted]
Phone: [redacted]

Test Surface

Surface Name: [redacted]
Depth (in"): [redacted]
Manufacturer: [redacted]
Slope %: Less than 5
Mfr. Source: [redacted]
Mfr. Lot #: [redacted]
Type: [redacted]
Mfr. Date: [redacted]

Procedures used to install, compact, and/or level prior to testing:

Other Notes:

Testing Authorized and Reviewed by: [redacted]

Date: [redacted]

Rotational Penetrometer Test Data

The rotational penetrometer test is conducted at 7 different locations with 7 tests at each location for both firmness and stability. The highest and lowest readings are excluded from the average firmness and stability calculations.

Brea Mall Playground Rotational Penetrometer Data

Location: 1065 Brea Mall, Brea, CA 92821 **Playground:** Southeast

Test Date/Conditions:		Rotational Penetrometer:		Surface Info:	
Test Date:	[redacted]	Mfr.:	[redacted]	Name:	[redacted]
Test Start Time:		Technician:		Type:	
Temp(°F):		Assistant:		Mfr.:	
Humidity:		Serial No.		Mrf. Source:	
Avg. Depth (in.):		Idc. Mk. Down:		Mfr. Date:	
Surface Temp (°F):		Tire 36 psi:		Mfr. Lot #:	
Wet/Dry:		Calibrated:		Slope %:	

ROTATIONAL PENETROMETER CALIBRATION

TEST	R1	R2	R3	R4	R5	R6	R7	AVERAGE	CONTROL
FIRMNESS	~~0.136~~	0.167	0.166	0.166	~~0.168~~	~~0.168~~	0.163	**0.1657**	0.156 ± .01
STABILITY	~~0.150~~	0.175	0.175	~~0.184~~	0.178	0.178	0.172	**0.175**	0.169 ± .015

ROTATIONAL PENETROMETER DATA

Test Location	Trial #	1	2	3	4	5	6	7	AVERAGE	PHOTO
R1	**FIRMNESS**	~~0.399~~	0.351	0.362	~~0.345~~	0.352	0.348	0.347	**0.352**	8420
	STABILITY	~~0.407~~	0.381	0.383	0.369	0.372	~~0.364~~	0.372	**0.375**	
R2	**FIRMNESS**	0.478	0.439	0.422	~~0.649~~	0.417	0.438	~~0.399~~	**0.439**	8422
	STABILITY	0.500	0.450	0.438	~~0.658~~	0.435	0.458	~~0.428~~	**0.456**	
R3	**FIRMNESS**	~~0.475~~	0.420	0.400	0.416	0.396	0.417	~~0.393~~	**0.410**	8424
	STABILITY	~~0.502~~	0.440	0.413	0.420	0.405	0.418	~~0.401~~	**0.419**	
R4	**FIRMNESS**	~~0.386~~	0.370	0.360	0.363	0.364	~~0.354~~	0.361	**0.364**	8426
	STABILITY	~~0.416~~	0.394	0.387	0.386	0.389	0.386	~~0.383~~	**0.388**	
R5	**FIRMNESS**	~~0.336~~	0.319	0.315	0.323	0.313	~~0.310~~	0.315	**0.317**	8428
	STABILITY	~~0.349~~	0.328	0.337	0.329	0.319	0.316	~~0.314~~	**0.326**	
R6	**FIRMNESS**	0.414	~~0.485~~	0.394	0.349	0.430	0.346	~~0.341~~	**0.387**	8430
	STABILITY	0.429	~~0.487~~	0.408	0.367	0.352	0.366	~~0.349~~	**0.384**	
R7	**FIRMNESS**	0.351	~~0.366~~	0.359	~~0.345~~	0.366	0.354	0.345	**0.355**	8432
	STABILITY	0.378	~~0.379~~	0.379	0.362	0.373	0.374	~~0.360~~	**0.373**	

Notes:

Results:

TOTAL AVERAGE FOR FIRMNESS:	**-0.375**	**Pass**
TOTAL AVERAGE FOR STABILITY:	**-0.389**	**Pass**

Total Average for Firmness: **-0.375**
Determination: **Moderately Firm**

Total Average for Stability: **-0.389**
Dertermination: **Stable**

Brea Mall Playground Rotational Penetrometer Photos

Photo 8420

Photo 8422

Photo 8424

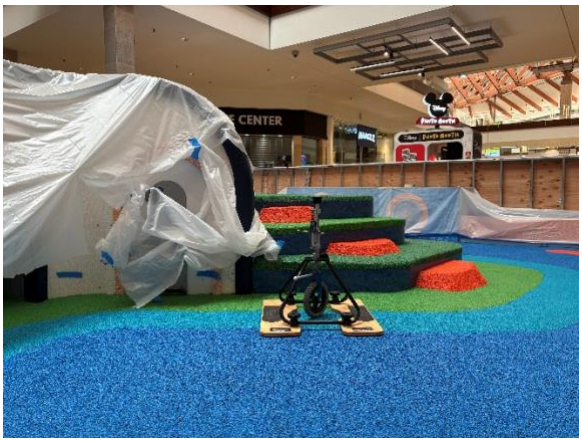


Photo 8426

END OF REPORT