

**TÜV SÜD America Inc.****Product Safety Services**

1755 Atlantic Blvd.

Auburn Hills, MI 48326

Phone: (616) 546-4600

**IPEMA Impact Attenuation Report – ASTM F1292-22**

Participant: Polyloom dba Tencate Grass  
Main Office Address: 1131 Broadway St.  
Dayton, TN 37321  
Phone: 423.413.7028  
Manufacturing Location ID: Dayton, TN  
Commercial Name of product: Playground MP CLR PERM (400053-CP)  
Date of Manufacture: Unknown  
No. of samples submitted: See Comments

TUV Report No.: 72186757-5a

Report Date: 2/14/2023

Test Date: 2/14/2023

Selection: ☐Initial: ☒Follow up: ☐ Ref Job:

Sample Receipt Date: 1/27/2023

Ambient Air Temperature: 22.2 °C

Humidity: 25 %

**Test Equipment:**Alpha Automation, Triax, TUV System 5: ☐

Environmental Chamber No.: PLYP00069

Alpha Automation, Triax, TUV System 7: ☒

Calibration Due Date: 8/30/2023

Accelerometer ID: PLYP00226

Environmental Chamber No.: AE-029

Accelerometer Calibration Date: 7/18/2022

Calibration Due Date: 8/30/2023

**Loose Fill Material Sample Description:**Engineered Wood Fiber: ☐

Un-compacted Depth: \_\_\_\_\_ Inches

Loose Fill Wood: ☐Rubber Nuggets: ☐Rubber Buffings: ☐Sand: ☐

Compacted Depth: \_\_\_\_\_ Inches

Gravel: ☐Other: ☐**Unitary Sample Description:**Tiles: ☐**Total Thickness:**Poured in Place: ☐

Top Layer: \_\_\_\_\_

Other: ☐

Base Layer: \_\_\_\_\_

**Turf System Sample Description:**Turf: ☒

Turf Pile Height: 1.325 Inches

Pad: ☒

Pad Thickness: 2.0 Inches

Aggregate: ☒

Aggregate: 4.0 Inches

Infill: ☒

Infill Amount: 2.0 Lbs./Sq. Ft.

Infill Type: envirofill

**Comments:**

- 1.) Customer submitted: eighteen (18) whole pieces of turf; twenty two (22) seamed pieces of turf; fifty five (55) 2.0 inch center pads, twenty seven (27) 2.0 inch seamed pads, twenty seven (27) 2.0 inch intersection pad, and 150lbs infill.  
2.) Playground MP CLR PERM (1.325in Pile Height)– infilled with 2.0 lbs per sq. ft. of Envirofill infill (grain size #12/20 mesh) – over 2.0 inch Tiger Playground Pad – overlaying 4in. of compacted aggregate. Total system depth/thickness of 7.325in.  
3.) Least Favorable Impact Location was Center Turf/Center Pad.  
4.) Last Favorable Impact Location report is 72186757-5b

**The maximum critical fall height of the above described sample was determined to be: 8 Ft.**

The results reported herein reflect the performance of the above described samples at the time of testing and at the temperature(s) reported. The results are specific to the described samples. Samples of surfacing materials that do not closely match the described samples will perform differently. The following data sheet provides an accurate representation of the test results.

**Sample in compliance with ASTM F1292-22 at the temperature and rating specified?**Yes ☒No ☐Signature: Patrick AshleyTitle: Project Engineering TechnicianDate: 2/14/2023Reviewed by: Timothy FranklinTitle: Project Engineering TechnicianDate: 2/22/2023

Participant: Polyloom dba Tencate GrassTUV Report No: 72186757-5aManufacturing Location ID: Dayton, TNTest Date: 2/14/2023

Drop	Critical Fall Height (Ft.)	Reference Temperature -4°C, (25°F)				Reference Temperature 23°C, (73°F)				Reference Temperature 49°C, (120°F)				
		G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)	G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)	G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)	
1	8	125	734	22.9	8.15	123	743	22.8	8.08	120	705	21.5	7.19	
2	8	124	739	22.9	8.15	128	778	22.9	8.15	126	706	21.5	7.19	
3	8	125	764	22.9	8.15	137	854	22.9	8.15	131	727	21.5	7.19	
Average		124.5	751.5			132.5	816.0			128.5	716.5			
Measured Surface Temperature		-4°C	Max. Change from reference + 5°C, (5°F)				23°C	Max. Change from reference $\pm$ 3°C, (5°F)				49°C	Max. Change from reference -3°C, (-5°F)	
Sample Condition:		Dry				Dry				Dry				

Drop	One foot over (Ft.)	Reference Temperature -4°C, (25°F)				Reference Temperature 23°C, (73°F)				Reference Temperature 49°C, (120°F)				
		G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)	G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)	G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)	
1	9	142	945	24.3	9.18	161	1113	24.3	9.18	175	1194	24.3	9.18	
2	9	145	976	24.3	9.18	164	1122	24.3	9.18	181	1235	24.3	9.18	
3	9	174	985	24.1	9.03	166	1161	24.3	9.18	195	1348	24.3	9.18	
Average		159.5	980.5			165.0	1141.5			188.0	1291.5			
Measured Surface Temperature		-4°C	Max. Change from reference + 5°C, (5°F)				23°C	Max. Change from reference <u>+3</u> °C, (5°F)				49°C	Max. Change from reference -3°C, (-5°F)	
Sample Condition:		Dry				Dry				Dry				

Drop	One foot under (Ft.)	Reference Temperature -4°C, (25°F)				Reference Temperature 23°C, (73°F)				Reference Temperature 49°C, (120°F)			
		G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)	G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)	G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)
1	7	98	506	21.4	7.12	93	502	21.4	7.12	91	441	21.4	7.12
2	7	111	591	21.4	7.12	106	576	21.5	7.19	110	588	24.5	9.33
3	7	112	601	21.4	7.12	102	550	21.5	7.19	120	645	21.4	7.12
Average		111.5	596.0			104.0	563.0			115.0	616.5		
Measured Surface Temperature		-3°C	Max. Change from reference + 5°C, (5°F)			23°C	Max. Change from reference <u>±</u> 3°C, (5°F)			48°C	Max. Change from reference -3°C, (-5°F)		
Sample Condition:		Dry				Dry				Dry			



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**IPEMA Surfacing Material Report - Least Favorable Impact Location – ASTM F1292-22**

Participant: Polyloom dba Tencate Grass  
 Main Office Address: 1131 Broadway St.  
 Dayton, TN 37321  
 Phone: 423.413.7028

Manufacturing Location ID: Dayton, TN  
 Commercial Name of Product: Playground MP CLR PERM (400053-CP)  
 Date of Manufacture: Unknown  
 No. of samples submitted: See Comments

Project No.: 72186757-5b

Report Date: 2/14/2023

Test Date: 2/14/2023

Selection: ☐ Initial Test: ☒Follow up Test: ☐ Ref Job: ☐

Sample Receipt Date: 1/27/2023

Ambient Air Temperature: 22.2°C

Humidity: 25%

**Test Equipment:**Alpha Automation, Triax, TUV System 5: ☐

Environmental Chamber No.: PLYP00069

Alpha Automation, Triax, TUV System 7: ☒

Calibration Due Date: 8/30/2023

Accelerometer ID: PLYP00226

Environmental Chamber No.: AE-029

Accelerometer Calibration Date: 7/18/2022

Calibration Due Date: 8/30/2023

**Unitary Sample Layer Description:**Tiles: ☐

Total Thickness: 7.325in.

Poured in Place: ☐

Top Layer: See Comments

Turf: ☒

Base Layer: See Comments

Other: ☐

**Determine Least Favorable Impact Location: The highest percentage (%) of maximum allowable value, based on g-max or HIC, as tested at the locations indicated on Pages 2 and 3.**

**Least Favorable Impact  
Location was determined at:**

**Impact Location:**

Center Turf/Center Pad

**Reference Temperature:**

23°C

**Comments:**

- 1.) Samples tested in laboratory environment, overlying poured concrete floor.
- 2.) Calculate the average g-max and HIC scores by averaging results from the second and third impacts.
- 3.) After Least Favorable Impact Location is determined at 23°C, remaining testing will be completed at temperatures 49°C and -6°C at that location.
- 4.) Customer submitted: eighteen (18) whole pieces of turf; twenty two (22) seamed pieces of turf; fifty five (55) 2.0 inch center pads, twenty seven (27) 2.0 inch seamed pads, twenty seven (27) 2.0 inch intersection pad, and 150lbs infill.
- 5.) Playground MP CLR PERM (1.325in. Pile Height)– infilled with 2.0 lbs per sq. ft. of Envirofill infill (grain size #12/20 mesh) – over 2.0 inch Tiger Playground Pad – overlying 4in. of compacted aggregate.
- 6.) Determine Critical Fall Height Report is 72186757-5a.

**The above described sample was tested at :**      8      **Ft.**

The results reported herein reflect the performance of the above described samples at the time of testing and at the temperature(s) reported. The results are specific to the described samples. Samples of surfacing materials that do not closely match the described samples will perform differently. The following data sheet provides an accurate representation of the test results.

**Sample in compliance with ASTM F1292-22 at the temperature and rating specified?**

Yes



No

Signature: Patrick AshleyTitle: Project Engineering TechnicianDate: 2/14/2023Reviewed by: Timothy FranklinTitle: Project Engineering TechnicianDate: 2/22/2023

Participant: Polyloom dba Tencate GrassProject No.: 72186757-5bManufacturing Location ID: Dayton, TNTest Date: 2/14/2023**Impact Location: Center Turf/Center Pad**

Drop	Specified Impact Height (Ft.)	Reference Temperature -4°C, (25°F)				Reference Temperature 23°C, (73°F)				Reference Temperature 49°C, (120°F)			
		G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)	G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)	G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)
1	8	125	734	22.9	8.15	123	743	22.8	8.08	125	705	21.5	7.19
2	8	124	739	22.9	8.15	128	778	22.9	8.15	126	706	21.5	7.19
3	8	125	764	22.9	8.15	137	854	22.9	8.15	131	727	21.5	7.19
Average		124.5	751.5			132.5	816.0			128.5	716.5		
Measured Surface Temperature		-4°C	Max. Change from reference + 5°C, (5°F)			23°C	Max. Change from reference + 3°C, (±5°F)			49°C	Max. Change from reference -3°C, (-5°F)		
Sample Condition:		DRY				DRY				DRY			
Percentage (%) of maximum allowable values (g-max and HIC):						G-Max:	66.3%	HIC:	81.6%				

**Impact Location: Center Turf/Seam Pad**

Drop	Specified Impact Height (Ft.)	Reference Temperature -4°C, (25°F)				Reference Temperature 23°C, (73°F)				Reference Temperature 49°C, (120°F)			
		G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)	G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)	G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)
1	8				0.00	104	616	22.8	8.08				0.00
2	8				0.00	116	697	22.9	8.15				0.00
3	8				0.00	122	746	22.9	8.15				0.00
Average		0.0	0.0			119.0	721.5			0.0	0.0		
Measured Surface Temperature		°C	Max. Change from reference + 5°C, (5°F)			23°C	Max. Change from reference + 3°C, (±5°F)			°C	Max. Change from reference -3°C, (-5°F)		
Sample Condition:		DRY				DRY				DRY			
Percentage (%) of maximum allowable values (g-max and HIC):						G-Max:	59.5%	HIC:	72.2%				

**Impact Location: Center Turf/Intersection Pad**

Drop	Specified Impact Height (Ft.)	Reference Temperature -4°C, (25°F)				Reference Temperature 23°C, (73°F)				Reference Temperature 49°C, (120°F)			
		G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)	G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)	G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)
1	8				0.00	102	598	22.9	8.15				0.00
2	8				0.00	120	721	22.9	8.15				0.00
3	8				0.00	120	726	22.9	8.15				0.00
Average		0.0	0.0			120.0	723.5			0.0	0.0		
Measured Surface Temperature		°C	Max. Change from reference + 5°C, (5°F)			23°C	Max. Change from reference + 3°C, (±5°F)			°C	Max. Change from reference -3°C, (-5°F)		
Sample Condition:		DRY				DRY				DRY			
Percentage (%) of maximum allowable values (g-max and HIC):						G-Max:	60.0%	HIC:	72.4%				



America

Participant: Polyloom dba Tencate GrassProject No.: 72186757-5bManufacturing Location ID: Dayton, TNTest Date: 2/14/2023**Impact Location: Seam Turf/Center Pad**

Drop	Specified Impact Height (Ft.)	Reference Temperature -4°C, (25°F)				Reference Temperature 23°C, (73°F)				Reference Temperature 49°C, (120°F)			
		G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)	G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)	G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)
1	8				0.00	114	747	22.8	8.08				0.00
2	8				0.00	116	755	22.8	8.08				0.00
3	8				0.00	121	775	22.9	8.15				0.00
Average		0.0	0.0			118.5	765.0			0.0	0.0		
Measured Surface Temperature		°C	Max. Change from reference + 5°C, (5°F)			23°C	Max. Change from reference + 3°C, (±5°F)			°C	Max. Change from reference -3°C, (-5°F)		
Sample Condition:		DRY				DRY				DRY			
Percentage (%) of maximum allowable values (g-max and HIC):						G-Max:	59.3%	HIC:	76.5%				

**Impact Location: Seam Turf/Seam Pad**

Drop	Specified Impact Height (Ft.)	Reference Temperature -4°C, (25°F)				Reference Temperature 23°C, (73°F)				Reference Temperature 49°C, (120°F)			
		G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)	G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)	G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)
1					0.00	96	556	22.8	8.08				0.00
2					0.00	111	645	22.8	8.08				0.00
3					0.00	119	694	22.9	8.15				0.00
Average		0.0	0.0			115.0	669.5			0.0	0.0		
Measured Surface Temperature		°C	Max. Change from reference + 5°C, (5°F)			23°C	Max. Change from reference + 3°C, (±5°F)			°C	Max. Change from reference -3°C, (-5°F)		
Sample Condition:		DRY				DRY				DRY			
Percentage (%) of maximum allowable values (g-max and HIC):						G-Max:	57.5%	HIC:	67.0%				

**Impact Location: Seam Turf/Intersection Pad**

Drop	Specified Impact Height (Ft.)	Reference Temperature -4°C, (25°F)				Reference Temperature 23°C, (73°F)				Reference Temperature 49°C, (120°F)			
		G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)	G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)	G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)
1					0.00	102	624	22.9	8.15				0.00
2					0.00	117	728	22.9	8.15				0.00
3					0.00	120	739	22.9	8.15				0.00
Average		0.0	0.0			118.5	733.5			0.0	0.0		
Measured Surface Temperature		°C	Max. Change from reference + 5°C, (5°F)			23°C	Max. Change from reference + 3°C, (±5°F)			°C	Max. Change from reference -3°C, (-5°F)		
Sample Condition:		DRY				DRY				DRY			
Percentage (%) of maximum allowable values (g-max and HIC):						G-Max:	59.3%	HIC:	73.4%				



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**IPEMA Impact Attenuation Report – ASTM F1292-22**

Participant: Polyloom dba Tencate Grass  
Main Office Address: 1131 Broadway St.  
Dayton, TN 37321  
Phone: 423.413.7028  
Manufacturing Location ID: Dayton, TN  
Commercial Name of product: Playground MP CLR PERM (400053-CP)  
Date of Manufacture: Unknown  
No. of samples submitted: See Comments

TUV Report No.: 72186757-10a

Report Date: 2/21/2023

Test Date: 2/21/2023

Selection: ☐Initial: ☒Follow up: ☐ Ref Job:

Sample Receipt Date: 1/27/2023

Ambient Air Temperature: 22.7 °C

Humidity: 26 %

**Test Equipment:**Alpha Automation, Triax, TUV System 5: ☐

Environmental Chamber No.: PLYP00069

Alpha Automation, Triax, TUV System 7: ☒

Calibration Due Date: 8/30/2023

Accelerometer ID: PLYP00226

Environmental Chamber No.: AE-029

Accelerometer Calibration Date: 7/18/2022

Calibration Due Date: 8/30/2023

**Loose Fill Material Sample Description:**Engineered Wood Fiber: ☐

Un-compacted Depth: \_\_\_\_\_ Inches

Loose Fill Wood: ☐Rubber Nuggets: ☐Rubber Buffings: ☐Sand: ☐

Compacted Depth: \_\_\_\_\_ Inches

Gravel: ☐Other: ☐**Unitary Sample Description:**Tiles: ☐

Total Thickness: \_\_\_\_\_

Poured in Place: ☐

Top Layer: \_\_\_\_\_

Other: ☐

Base Layer: \_\_\_\_\_

**Turf System Sample Description:**Turf: ☒

Turf Pile Height: 1.325 Inches

Pad: ☒

Pad Thickness: 1.0 Inches

Aggregate: ☒

Aggregate: 4.0 Inches

Infill: ☒

Infill Amount: 2.0 Lbs./Sq. Ft.

Infill Type: envirofill

**Comments:**

- 1.) Customer submitted: eighteen (18) whole pieces of turf; twenty two (22) seamed pieces of turf; fifty five (55) 1.0 inch center pads, twenty seven (27) 1.0 inch seamed pads, twenty seven (27) 1.0 inch intersection pad, and 150lbs infill.  
2.) Playground MP CLR PERM (1.325in Pile Height) – infilled with 2.0 lbs per sq. ft. of Envirofill infill (grain size #12/20 mesh) – over 1.0 inch Tiger Playground Pad – overlaying 4in. of compacted aggregate. Total system depth/thickness of 6.325in.  
3.) Least Favorable Impact Location was Center Turf/Intersection of Pad.  
4.) Last Favorable Impact Location report is 72186757-10b

**The maximum critical fall height of the above described sample was determined to be: 5 Ft.**

The results reported herein reflect the performance of the above described samples at the time of testing and at the temperature(s) reported. The results are specific to the described samples. Samples of surfacing materials that do not closely match the described samples will perform differently. The following data sheet provides an accurate representation of the test results.

**Sample in compliance with ASTM F1292-22 at the temperature and rating specified?**Yes ☒No ☐Signature: Patrick AshleyTitle: Project Engineering TechnicianDate: 2/21/2023Reviewed by: Timothy FranklinTitle: Project Engineering TechnicianDate: 2/22/2023

Participant: Polyloom dba Tencate GrassTUV Report No: 72186757-10aManufacturing Location ID: Dayton, TNTest Date: 2/21/2023

Drop	Critical Fall Height (Ft.)	Reference Temperature -4°C, (25°F)				Reference Temperature 23°C, (73°F)				Reference Temperature 49°C, (120°F)				
		G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)	G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)	G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)	
1	5	149	674	18.1	5.09	122	553	18.0	5.04	169	800	18.1	5.09	
2	5	159	743	18.1	5.09	154	715	18.1	5.09	186	891	18.1	5.09	
3	5	168	789	18.1	5.09	156	729	18.1	5.09	179	866	18.1	5.09	
Average		163.5	766.0			155.0	722.0			182.5	878.5			
Measured Surface Temperature		-4°C	Max. Change from reference + 5°C, (5°F)				23°C	Max. Change from reference ± 3°C, (5°F)				49°C	Max. Change from reference -3°C, (-5°F)	
Sample Condition:		Dry				Dry				Dry				

Drop	One foot over (Ft.)	Reference Temperature -4°C, (25°F)				Reference Temperature 23°C, (73°F)				Reference Temperature 49°C, (120°F)				
		G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)	G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)	G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)	
1	6	194	1048	19.8	6.09	187	1010	19.8	6.09	228	1320	19.8	6.09	
2	6	205	1139	19.8	6.09	200	1131	19.8	6.09	231	1384	19.8	6.09	
3	6	182	955	19.8	6.09	203	1185	19.8	6.09	223	1279	19.8	6.09	
Average		193.5	1047.0			201.5	1158.0			227.0	1331.5			
Measured Surface Temperature		-3°C	Max. Change from reference + 5°C, (5°F)				23°C	Max. Change from reference <u>+3</u> °C, (5°F)				48°C	Max. Change from reference -3°C, (-5°F)	
Sample Condition:		Dry				Dry				Dry				

Drop	One foot under (Ft.)	Reference Temperature -4°C, (25°F)				Reference Temperature 23°C, (73°F)				Reference Temperature 49°C, (120°F)			
		G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)	G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)	G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)
1	4	92	372	16.2	4.08	94	335	16.2	4.08	108	382	16.2	4.08
2	4	106	424	16.2	4.08	118	445	16.2	4.08	118	443	16.2	4.08
3	4	109	422	16.2	4.08	126	480	16.2	4.08	128	483	16.2	4.08
Average		107.5	423.0			122.0	462.5			123.0	463.0		
Measured Surface Temperature		-4°C	Max. Change from reference + 5°C, (5°F)			23°C	Max. Change from reference <u>+3</u> °C, (5°F)			49°C	Max. Change from reference -3°C, (-5°F)		
Sample Condition:		Dry				Dry				Dry			



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**IPEMA Surfacing Material Report - Least Favorable Impact Location – ASTM F1292-22**

Participant: Polyloom dba Tencate Grass  
Main Office Address: 1131 Broadway St.  
Dayton, TN 37321  
Phone: 423.413.7028

Manufacturing Location ID: Dayton, TN  
Commercial Name of Product: Playground MP CLR PERM (400053-CP)  
Date of Manufacture: Unknown  
No. of samples submitted: See Comments

Project No.: 72186757-10bReport Date: 2/21/2023Test Date: 2/21/2023Selection: ☐ Initial Test: ☒Follow up Test: ☐ Ref Job: ☐Sample Receipt Date: 1/27/2023Ambient Air Temperature: 22.7°CHumidity: 26%**Test Equipment:**Alpha Automation, Triax, TUV System 5: ☐Alpha Automation, Triax, TUV System 7: ☒Accelerometer ID: PLYP00226Accelerometer Calibration Date: 7/18/2022Environmental Chamber No. PLYP00069Calibration Due Date: 8/30/2023Environmental Chamber No. AE-029Calibration Due Date: 8/30/2023**Unitary Sample Layer Description:**Tiles: ☐Poured in Place: ☐Turf: ☒Other: ☐Total Thickness: 6.325in.Top Layer: See CommentsBase Layer: See Comments

**Determine Least Favorable Impact Location: The highest percentage (%) of maximum allowable value, based on g-max or HIC, as tested at the locations indicated on Pages 2 and 3.**

**Least Favorable Impact  
Location was determined at:**

**Impact Location:**Center Turf/Intersection  
of Pad**Reference Temperature:**23°C**Comments:**

- 1.) Samples tested in laboratory environment, overlying poured concrete floor.
- 2.) Calculate the average g-max and HIC scores by averaging results from the second and third impacts.
- 3.) After Least Favorable Impact Location is determined at 23°C, remaining testing will be completed at temperatures 49°C and -6°C at that location.
- 4.) Customer submitted: eighteen (18) whole pieces of turf; twenty two (22) seamed pieces of turf; fifty five (55) 1.0 inch center pads, twenty seven (27) 1.0 inch seamed pads, twenty seven (27) 1.0 inch intersection pad, and 150lbs infill.
- 5.) Playground MP CLR PERM (1.325in Pile Height)– infilled with 2.0 lbs per sq. ft. of Envirofill infill (grain size #12/20 mesh) – over 1.0 inch Tiger Playground Pad – overlaying 4in. of compacted aggregate.
- 6.) Determine Critical Fall Height report 72186757-10a.

**The above described sample was tested at :**      5      **Ft.**

The results reported herein reflect the performance of the above described samples at the time of testing and at the temperature(s) reported. The results are specific to the described samples. Samples of surfacing materials that do not closely match the described samples will perform differently. The following data sheet provides an accurate representation of the test results.

**Sample in compliance with ASTM F1292-22 at the temperature and rating specified?**

Yes



No

Signature: Patrick AshleyTitle: Project Engineering TechnicianDate: 2/21/2023Reviewed by: Timothy FranklinTitle: Project Engineering TechnicianDate: 2/22/2023

Participant: Polyloom dba Tencate GrassProject No.: 72186757-10bManufacturing Location ID: Dayton, TNTest Date: 2/21/2023**Impact Location: Center Turf/Intersection of Pad**

Drop	Specified Impact Height (Ft.)	Reference Temperature -4°C, (25°F)				Reference Temperature 23°C, (73°F)				Reference Temperature 49°C, (120°F)			
		G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)	G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)	G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)
1	5	149	674	18.1	5.09	122	553	18.0	5.04	169	800	18.1	5.09
2	5	159	743	18.1	5.09	154	715	18.1	5.09	186	891	18.1	5.09
3	5	168	789	18.1	5.09	156	729	18.1	5.09	179	866	18.1	5.09
Average		163.5	766.0			155.0	722.0			182.5	878.5		
Measured Surface Temperature		-4°C	Max. Change from reference + 5°C, (5°F)			23°C	Max. Change from reference + 3°C, (±5°F)			49°C	Max. Change from reference -3°C, (-5°F)		
Sample Condition:		DRY				DRY				DRY			
Percentage (%) of maximum allowable values (g-max and HIC):						G-Max:	77.5%	HIC:	72.2%				

**Impact Location: Center Turf/Seam Pad**

Drop	Specified Impact Height (Ft.)	Reference Temperature -4°C, (25°F)				Reference Temperature 23°C, (73°F)				Reference Temperature 49°C, (120°F)				
		G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)	G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)	G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)	
1	5				0.00	117	506	18.0	5.04				0.00	
2	5				0.00	141	636	18.1	5.09				0.00	
3	5				0.00	154	706	18.1	5.09				0.00	
Average		0.0	0.0			147.5	671.0			0.0	0.0			
Measured Surface Temperature		°C	Max. Change from reference + 5°C, (5°F)				23°C	Max. Change from reference + 3°C, (±5°F)				°C	Max. Change from reference -3°C, (-5°F)	
Sample Condition:		DRY				DRY				DRY				
Percentage (%) of maximum allowable values (g-max and HIC):						G-Max:	73.8%	HIC:	67.1%					

**Impact Location: Center Turf/Center Pad**

Drop	Specified Impact Height (Ft.)	Reference Temperature -4°C, (25°F)				Reference Temperature 23°C, (73°F)				Reference Temperature 49°C, (120°F)				
		G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)	G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)	G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)	
1	5				0.00	118	510	18.0	5.04				0.00	
2	5				0.00	150	698	18.1	5.09				0.00	
3	5				0.00	155	718	18.1	5.09				0.00	
Average		0.0	0.0			152.5	708.0			0.0	0.0			
Measured Surface Temperature		°C	Max. Change from reference + 5°C, (5°F)				23°C	Max. Change from reference + 3°C, (±5°F)				°C	Max. Change from reference -3°C, (-5°F)	
Sample Condition:		DRY				DRY				DRY				
Percentage (%) of maximum allowable values (g-max and HIC):						G-Max:	76.3%	HIC:	70.8%					



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Participant: Polyloom dba Tencate GrassProject No.: 72186757-10bManufacturing Location ID: Dayton, TNTest Date: 2/21/2023**Impact Location: Seam Turf/Center Pad**

Drop	Specified Impact Height (Ft.)	Reference Temperature -4°C, (25°F)				Reference Temperature 23°C, (73°F)				Reference Temperature 49°C, (120°F)			
		G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)	G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)	G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)
1	5				0.00	103	453	18.0	5.04				0.00
2	5				0.00	124	556	18.0	5.04				0.00
3	5				0.00	134	599	18.0	5.04				0.00
Average		0.0	0.0			129.0	577.5			0.0	0.0		
Measured Surface Temperature		°C	Max. Change from reference + 5°C, (5°F)			23°C	Max. Change from reference + 3°C, (±5°F)			°C	Max. Change from reference -3°C, (-5°F)		
Sample Condition:		DRY				DRY				DRY			
Percentage (%) of maximum allowable values (g-max and HIC):						G-Max:	64.5%	HIC:	57.8%				

**Impact Location: Seam Turf/Seam Pad**

Drop	Specified Impact Height (Ft.)	Reference Temperature -4°C, (25°F)				Reference Temperature 23°C, (73°F)				Reference Temperature 49°C, (120°F)			
		G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)	G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)	G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)
1					0.00	113	515	18.0	5.04				0.00
2					0.00	127	601	18.0	5.04				0.00
3					0.00	136	633	18.0	5.04				0.00
Average		0.0	0.0			131.5	617.0			0.0	0.0		
Measured Surface Temperature		°C	Max. Change from reference + 5°C, (5°F)			23°C	Max. Change from reference + 3°C, (±5°F)			°C	Max. Change from reference -3°C, (-5°F)		
Sample Condition:		DRY				DRY				DRY			
Percentage (%) of maximum allowable values (g-max and HIC):						G-Max:	65.8%	HIC:	61.7%				

**Impact Location: Seam Turf/Intersection Pad**

Drop	Specified Impact Height (Ft.)	Reference Temperature -4°C, (25°F)				Reference Temperature 23°C, (73°F)				Reference Temperature 49°C, (120°F)			
		G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)	G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)	G-Max	HIC	Velocity (ft/s)	Theoretical Drop Height (ft.)
1					0.00	111	454	18.0	5.04				0.00
2					0.00	142	638	18.0	5.04				0.00
3					0.00	147	678	18.0	5.04				0.00
Average		0.0	0.0			144.5	658.0			0.0	0.0		
Measured Surface Temperature		°C	Max. Change from reference + 5°C, (5°F)			23°C	Max. Change from reference + 3°C, (±5°F)			°C	Max. Change from reference -3°C, (-5°F)		
Sample Condition:		DRY				DRY				DRY			
Percentage (%) of maximum allowable values (g-max and HIC):						G-Max:	72.3%	HIC:	65.8%				

