



TUV SUD America Inc.
Product Safety Services
 1755 Atlantic Blvd.
 Auburn Hills, MI 48326
 Phone: (616) 546-4600

Surfacing Material Report - Least Favorable Impact Location – ASTM F1292-17

Client: Rubber Designs, Inc
 Manufacturer: Rubber Designs, Inc
 Manufacturing Location: Calhoun, GA 30701
 Phone: (706) 383-7528
 Commercial Name of Product: EPDM Tiles
 Date of Manufacture: Unknown
 No. of samples submitted: 8 - 18in. x 18in. Samples

Project No.: 72132853-4
 Report Date: 12/6/2017
 Test Date: 12/5/2017 & 12/6/2017
 Initial Test:
 Follow up Test: **Ref Job:**
 Sample Receipt Date: 11/20/2017
 Ambient Air Temperature: 23.0°C
 Humidity: 34%

Test Equipment:

Alpha Automation, Triax, TUV System 5: Environmental Chamber No.: PLYP00101
 Alpha Automation, Triax, TUV System 4: Calibration Due Date: 09/15/2018
 Accelerometer ID: PLYP00117 Environmental Chamber No.: PLYP00069
 Accelerometer Calibration Date: 3/31/2017 Calibration Due Date: 09/15/2018

Unitary Sample Layer Description:

Tiles: Total Thickness: 4.25in
 Poured in Place: Top Layer: 0.25in
 Turf: Base Layer: 4.00in
 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 Page 2 and 3.

Least Favorable Impact Location was determined at: Seam at Interlock **Impact Location:** Seam at Interlock **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.

The above described sample was tested at : 10 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. Compliance with this Standard does not constitute product certification.

Sample in compliance with ASTM F1292-17 at the temperature and rating specified? Yes No

Signature: [Signature] Title: Project Coordinator Date: 12/6/2017

Reviewed by: [Signature] Title: Regional Manager Date: 12/7/2017

Client: Rubber Designs, Inc

Project No.: 72132853-4

Manufacturer: Rubber Designs, Inc

Test Date: 12/5/2017 & 12/6/2017

Impact Location: Center

Drop	Specified Impact Height (Ft.)	Reference Temperature -6°C, (21.2°F)				Reference Temperature 23°C, (73.4°F)				Reference Temperature 49°C, (120.2°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	10				0.00	101	669	25.5	10.11				0.00	
2	10				0.00	111	751	25.4	10.03				0.00	
3	10				0.00	117	791	25.4	10.03				0.00	
Average		0.0	0.0			114.0	771.0			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:	57.0%	HIC:	77.1%					

Impact Location: Corner

Drop	Specified Impact Height (Ft.)	Reference Temperature -6°C, (21.2°F)				Reference Temperature 23°C, (73.4°F)				Reference Temperature 49°C, (120.2°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	10				0.00	103	638	25.5	10.11				0.00	
2	10				0.00	100	631	25.5	10.11				0.00	
3	10				0.00	97	597	25.5	10.11				0.00	
Average		0.0	0.0			98.5	614.0			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:	49.3%	HIC:	61.4%					

Impact Location: Seam at Interlock

Drop	Specified Impact Height (Ft.)	Reference Temperature -6°C, (21.2°F)				Reference Temperature 23°C, (73.4°F)				Reference Temperature 49°C, (120.2°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	10	129	947	25.3	9.95	109	760	25.4	10.03	101	676	25.3	9.95	
2	10	131	965	25.4	10.03	109	747	25.4	10.03	105	708	25.4	10.03	
3	10	133	976	25.4	10.03	120	867	25.4	10.03	103	689	25.4	10.03	
Average		132.0	970.5			114.5	807.0			104.0	698.5			
Measured Surface Temperature		-6°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:	57.3%	HIC:	80.7%					



Client: Rubber Designs, Inc

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Test Date: 12/5/2017 & 12/6/2017

Impact Location: Intersection of Four Tiles

Drop	Specified Impact Height (Ft.)	Reference Temperature -6°C, (21.2°F)				Reference Temperature 23°C, (73.4°F)				Reference Temperature 49°C, (120.2°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	10				0.00	107	718	25.4	10.03				0.00
2	10				0.00	104	710	25.4	10.03				0.00
3	10				0.00	119	836	25.4	10.03				0.00
Average		0.0	0.0			111.5	773.0			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:	55.8%	HIC:	77.3%				

Impact Location:

Drop	Specified Impact Height (Ft.)	Reference Temperature -6°C, (21.2°F)				Reference Temperature 23°C, (73.4°F)				Reference Temperature 49°C, (120.2°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				0.00				0.00
2					0.00				0.00				0.00
3					0.00				0.00				0.00
Average		0.0	0.0			0.0	0.0			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:	0.0%	HIC:	0.0%				

Impact Location:

Drop	Specified Impact Height (Ft.)	Reference Temperature -6°C, (21.2°F)				Reference Temperature 23°C, (73.4°F)				Reference Temperature 49°C, (120.2°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				0.00				0.00
2					0.00				0.00				0.00
3					0.00				0.00				0.00
Average		0.0	0.0			0.0	0.0			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:	0.0%	HIC:	0.0%				

