



**TÜV SÜD America Inc.**  
**Product Safety Services**  
 1755 Atlantic Blvd.  
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 Phone: (616) 546-4600

**IPEMA IMPACT ATTENUATION REPORT – ASTM F1292-13**

Participant: Hanover Specialties  
 Main Office Address: 35 Feldland St.  
Bohemia, NY 11716  
 Phone: (631) 231-1300  
 Manufacturing Location ID: Bohemia, NY  
 Commercial Name of product: 4 in. PIP  
 Date of Manufacture: Unknown  
 No. of samples submitted: 3 - 18in. X 18in. PIP Samples

Project No.: 72116319 rev. 1  
 Report Date: 5/25/2016  
 Test Date: 4/29/2016  
 Selection:  Initial:   
 Follow up:  Ref. Job:  
 Sample Receipt Date: 4/22/2016  
 Ambient Air Temperature: 23.7°C  
 Humidity: 21.0%

**Test Equipment:**

Triax System 5:	<input checked="" type="checkbox"/>	Environmental Chamber No.:	PLYP00069
Triax System 4:	<input type="checkbox"/>	Calibration Due Date:	9/29/2016
Accelerometer ID:	PLYP00089	Environmental Chamber No.:	PLYP00101
Accelerometer Calibration Due Date:	7/27/2016	Calibration Due Date:	9/29/2016

**Loose Fill Material Sample Description:**

Engineered Wood Fiber:	<input type="checkbox"/>	Un-compacted Depth:	Inches
Loose Fill Wood:	<input type="checkbox"/>		
Rubber:	<input type="checkbox"/>		
Sand:	<input type="checkbox"/>	Compacted Depth:	Inches
Gravel:	<input type="checkbox"/>		
Other:	<input type="checkbox"/>		

**Unitary Sample Description:**

Tiles	<input type="checkbox"/>	Total Thickness:	<u>4 in.</u>
Poured in Place	<input checked="" type="checkbox"/>	Top Layer:	<u>0.5 in.</u>
Other	<input type="checkbox"/>	Base Layer:	<u>3.5 in.</u>

**Comments:**

Revision 1 reflects Maximum fall height as determined per client request, not exceeding a HIC of 850.

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

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 F1292-13 at the temperature and rating specified? Yes  No

Signature: [Handwritten Signature]

Title: Project Coordinator Date: 5/25/2016

Reviewed by: [Handwritten Signature]

Title: Regional MGR Date: 5/26/16

Client: Hanover Specialties

Project No.: 72116319 rev. 1

Manufacturer: Hanover Specialties

Test Date: 4/29/2016

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	8	114	708	22.7	8.011	119	777	22.7	8.011	115	762	22.7	8.011
2	8	120	752	22.7	8.011	118	727	22.7	8.011	118	782	22.7	8.011
3	8	123	790	22.7	8.011	122	757	22.7	8.011	121	822	22.7	8.011
Average		121.5	771			120	742			119.5	802		
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			

Drop	One foot over (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	9	128	830	24.1	9.029	132	924	24.1	9.029	128	885	24.1	9.029
2	9	128	802	24.1	9.029	134	933	24.1	9.029	130	943	24.1	9.029
3	9	132	863	24.1	9.029	135	952	24.1	9.029	129	931	24.1	9.029
Average		130	832.5			134.5	942.5			129.5	937		
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			

Drop	One foot under (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	7	104	572	21.3	7.053	107	598	21.3	7.053	101	547	21.3	7.053
2	7	105	565	21.2	6.987	107	597	21.3	7.053	102	580	21.3	7.053
3	7	103	545	21.2	6.987	108	600	21.3	7.053	106	621	21.3	7.053
Average		104	555			107.5	598.5			104	600.5		
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			



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