

TEST REPORT

REPORT NO. TH40054/2011
PAGE NO. 1 OF 20
DATE: May 04, 2011

EVA-GLORY INDUSTRIAL CO., LTD.

NO. 33, HSIANG HO RD. LEE LIN VILLAGE, TAN TZU, TAICHUNG, TAIWAN, R.O.C.

The following merchandise was submitted and identified by the applicant as:

Product Description: TK-Pro
Style/Item No.: 2522Q28-642PX
Q'ty of Sample: 9 pieces
Color of Sample: Red (1/2 T) & Blue (1/2 T)
Size of Sample: 102cm (L) x 102cm (W) x 2.5cm (T)
Sample Received Date: Apr. 13, 2011
Test Period: Apr. 14, 2011 ~ May 03, 2011

We have tested the submitted sample(s) as requested and the following results were obtained:

Test Requested: According to EN 1177:2008 Impact Attenuating playground surfacing – Determination of critical fall height. (The evaluations of EN1176-1 clause 4 and 6 have been excluded.)

Test Methods: According to EN 1177:2008 Impact Attenuating playground surfacing – Determination of critical fall height.

Test Results: Critical Fall Height: 0.8m (Testing in the laboratory follows to EN1177:2008)

Note. According to EN 1177:2008, conducting impact tests on different positions after attached individual pieces of sample.

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Signed for and on behalf of
SGS Taiwan Ltd.

Rex Su
Supervisor

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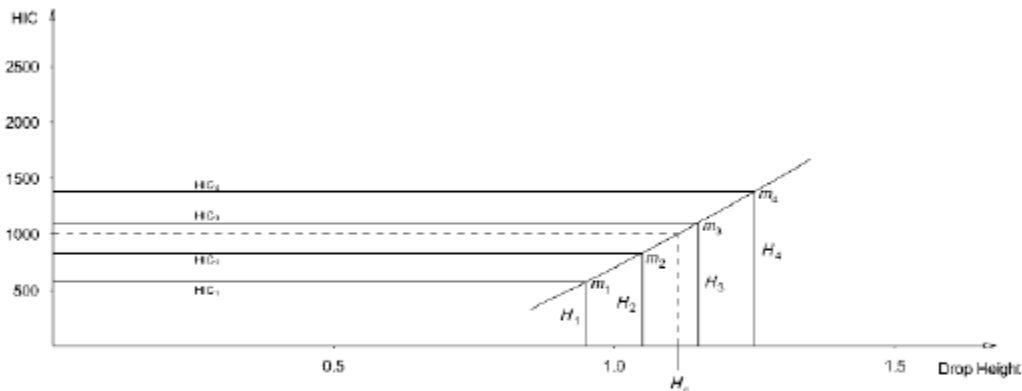
Test Results:

1 st test	<p>Method of fixing: Take sample #2 and attached them with double-sided tapes on the edges of each sample, and place on a flat, rigid concrete floor.</p> <p>Position Description: In the centre of the blue surface of sample.</p>		
Drop Test	Height (m)	HIC	Requirements
1 st	0.95	572	HIC ≤ 1000
2 nd	1.05	828	
3 rd	1.15	1201	
4 th	1.25	1378	
Environmental Condition	Temp.: 23°C / R.H.: 61%		
Sample Condition	Dry		

Determination:

The Maximum height at Position A that meets $HIC \leq 1000$ is 1.0m.
 (The results were rounded up to first decimal.)

The curve of HIC vs. drop height at 1st test



Key
m impact measurements
H drop height
H_c critical fall height

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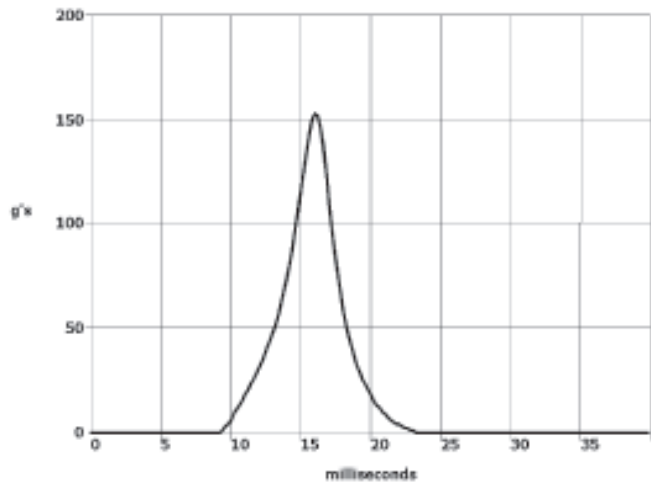
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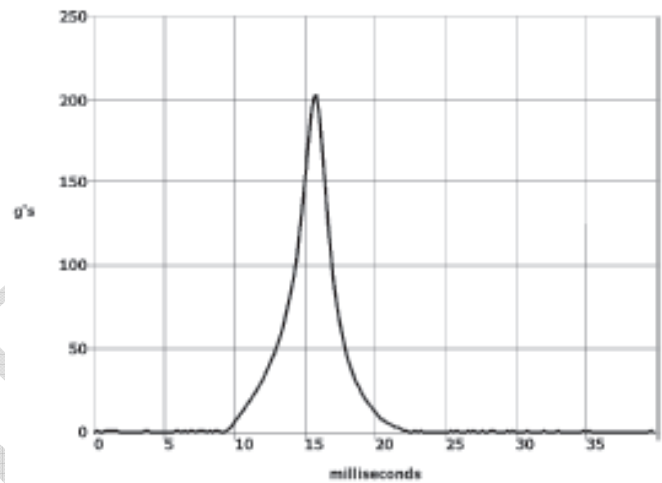
Test Results:

The time/acceleration curve at 1st test

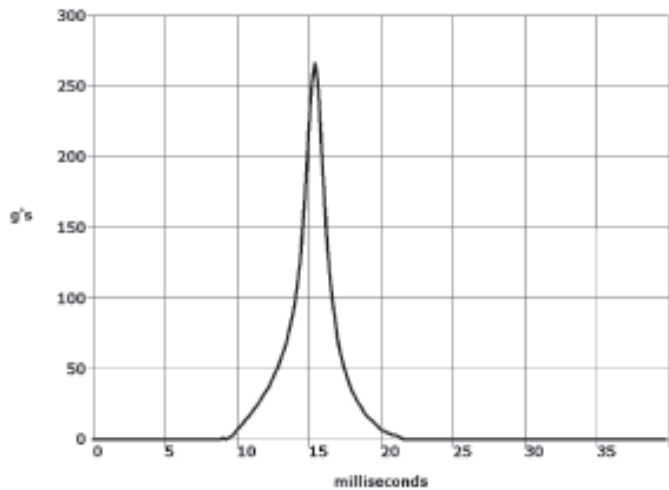
1st Drop
Height: 0.95m
Peak: 154
HIC: 572



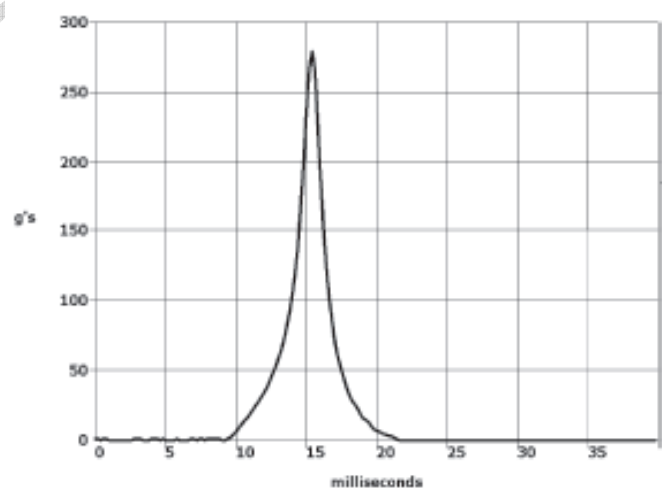
2nd Drop
Height: 1.05m
Peak: 205
HIC: 828



3rd Drop
Height: 1.15m
Peak: 267
HIC: 1201



4th Drop
Height: 1.25m
Peak: 281
HIC: 1378




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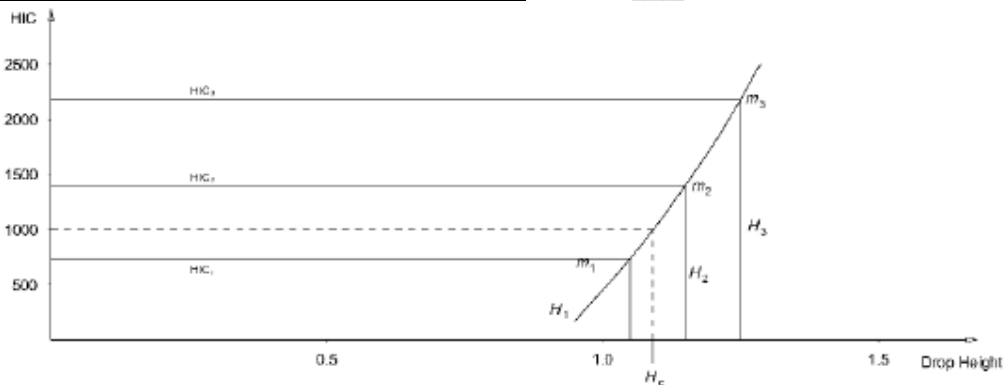
Test Results:

2 nd test	<p><u>Method of fixing:</u> Take sample #4 and attached them with double-sided tapes on the edges of each sample, and place on a flat, rigid concrete floor.</p> <p><u>Position Description:</u> In the centre of the blue surface of sample.</p>		
Drop Test	Height (m)	HIC	Requirements
1 st	1.05	739	HIC ≤ 1000
2 nd	1.15	1396	
3 rd	1.25	2178	
4 th	0.95	965	
Environmental Condition	Temp.: 20°C /R.H.: 65%		
Sample Condition	Dry		

Determination:

The Maximum height at Position A that meets $HIC \leq 1000$ is 1.0m.
(The results were rounded up to first decimal.)

The curve of HIC vs. drop height at 2nd test



Key
m impact measurements
H drop height
H_c critical fall height

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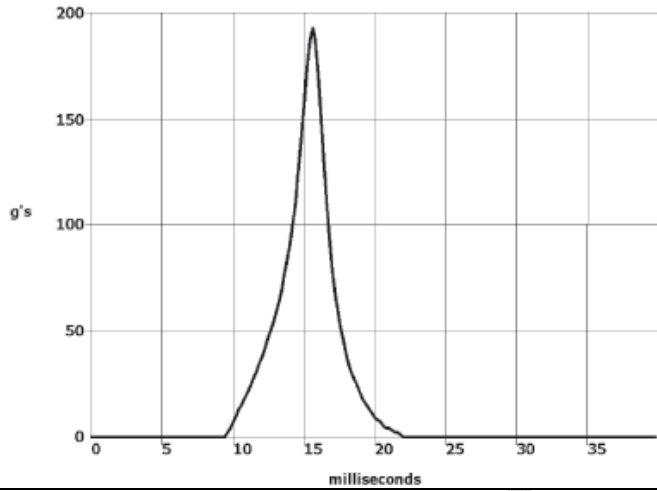
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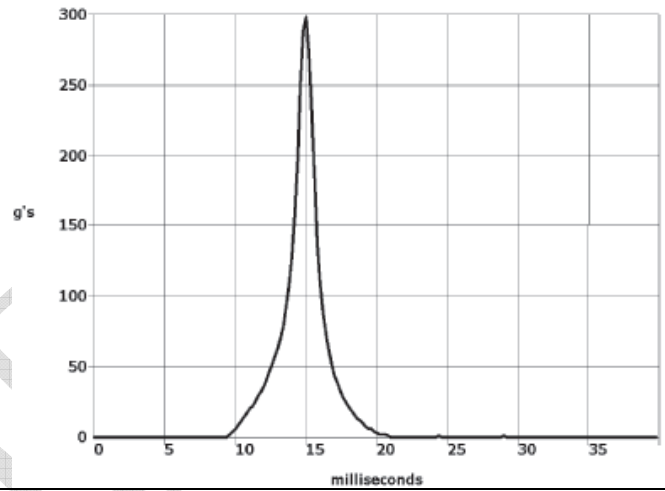
Test Results:

The time/acceleration curve at 2nd test

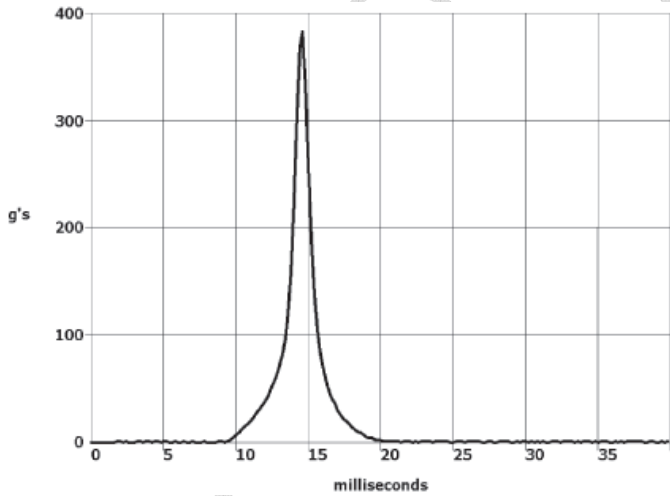
1st Drop
Height: 1.05m
Peak: 194
HIC: 739



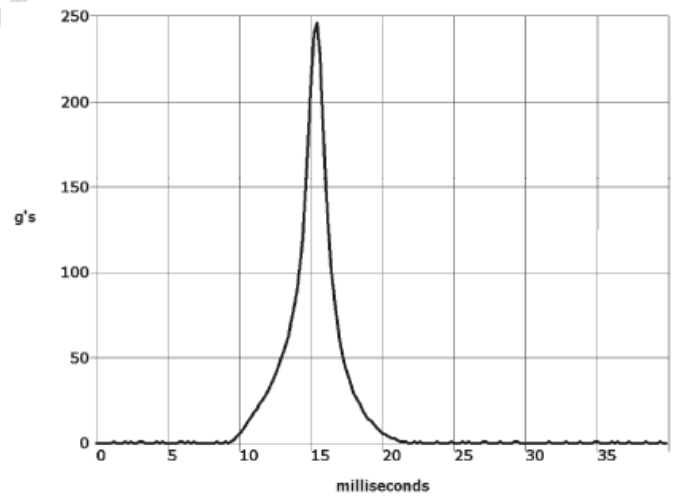
2nd Drop
Height: 1.15m
Peak: 301
HIC: 1396



3rd Drop
Height: 1.25m
Peak: 389
HIC: 2178



4th Drop
Height: 0.95m
Peak: 248
HIC: 965




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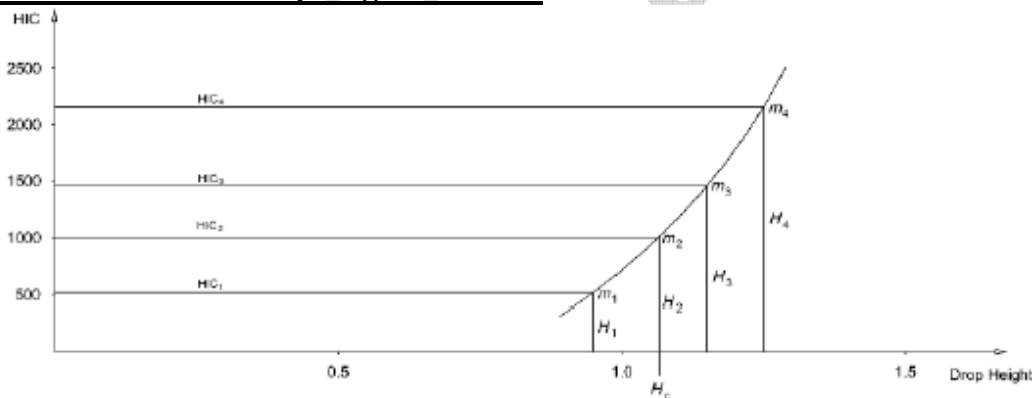
Test Results:

3 rd test	<p>Method of fixing: Take sample #5 and attached them with double-sided tapes on the edge of each sample, and place on a flat, rigid concrete floor.</p> <p>Position Description: In the centre of the red surface of sample.</p>		
Drop Test	Height (m)	HIC	Requirements
1 st	0.95	514	HIC ≤ 1000
2 nd	1.05	1000	
3 rd	1.15	1452	
4 th	1.25	2154	
Environmental Condition	Temp.: 19°C/R.H.: 70%		
Sample Condition	Dry		

Determination:

The Maximum height at Position A that meets $HIC \leq 1000$ is 1.0m.
 (The results were rounded up to first decimal.)

The curve of HIC vs. drop height at 3rd test



Key

- m* impact measurements
- H* drop height
- H_c* critical fall height

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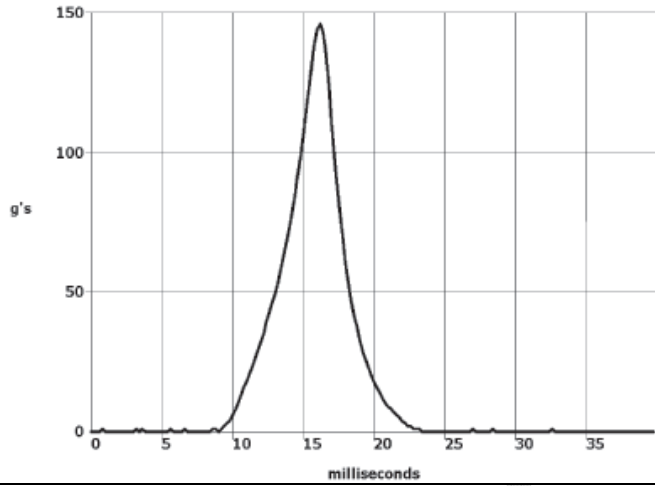
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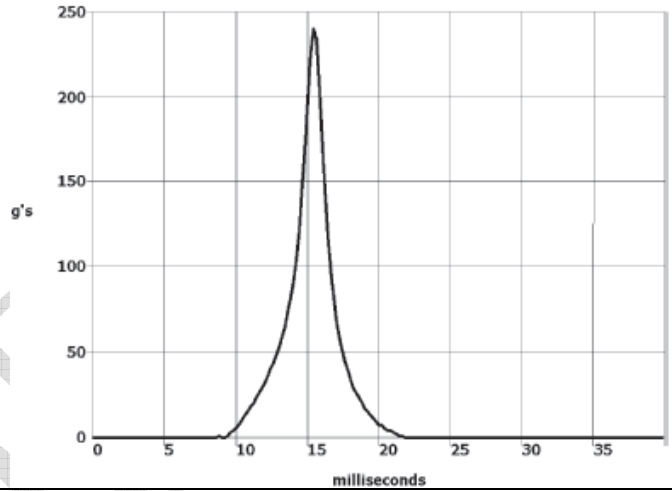
Test Results:

The time/acceleration curve at 3rd test

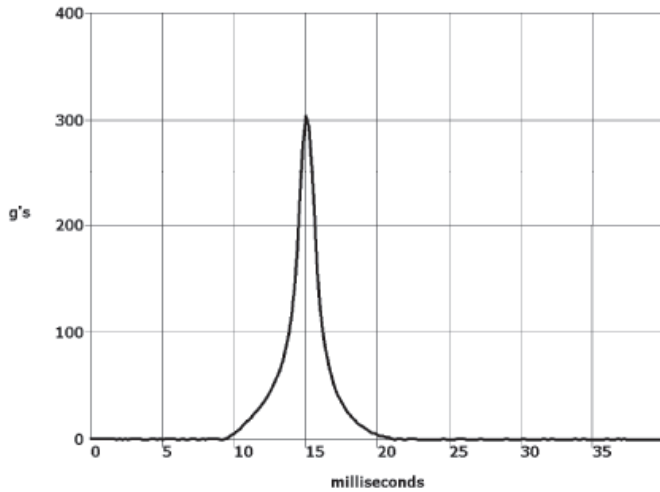
1st Drop
Height: 0.95m
Peak: 146
HIC: 514



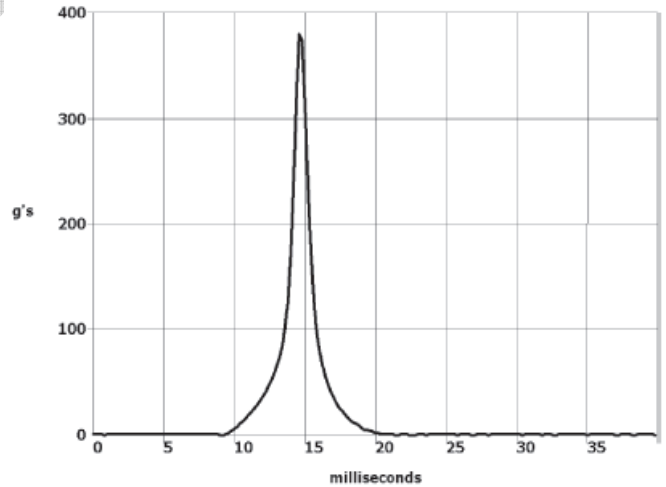
2nd Drop
Height: 1.05m
Peak: 241
HIC: 1000



3rd Drop
Height: 1.15m
Peak: 307
HIC: 1452



4th Drop
Height: 1.25m
Peak: 388
HIC: 2154




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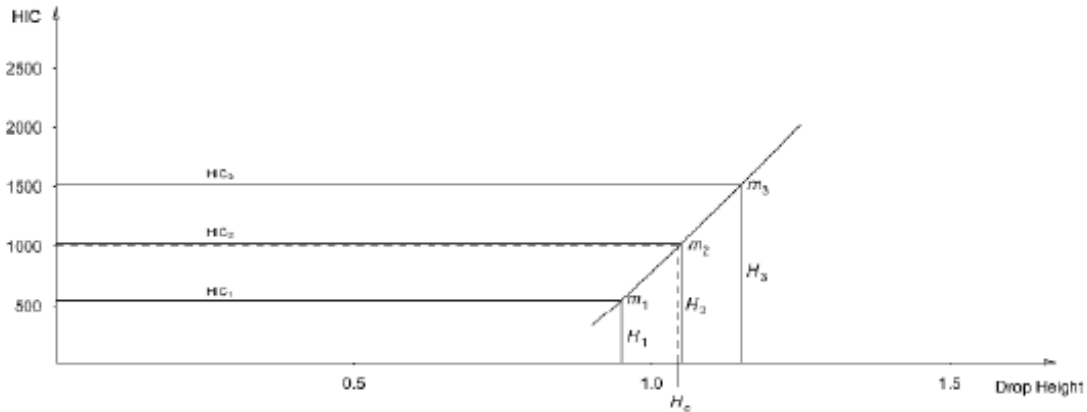
Test Results:

4 th test	<p>Method of fixing: Take sample #3 and #4, and attached them with double-sided tapes on the edges of each sample, and place on a flat, rigid concrete floor.</p> <p>Position Description: In the centre of a joint between sample #3(red surface) and #4(blue surface).</p>		
Drop Test	Height (m)	HIC	Requirements
1 st	0.95	544	HIC ≤ 1000
2 nd	1.05	1021	
3 rd	1.15	1513	
4 th	0.85	785	
Environmental Condition	Temp.: 21°C/R.H.: 70%		
Sample Condition	Dry		

Determination:

The Maximum height at Position A that meets $HIC \leq 1000$ is 0.9m.
 (The results were rounded up to first decimal.)

The curve of HIC vs. drop height at 4th test



Key

- m impact measurements
- H drop height
- H_c critical fall height

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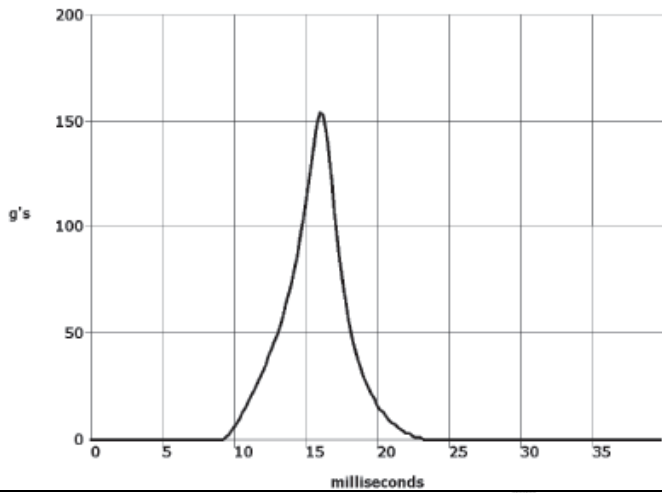
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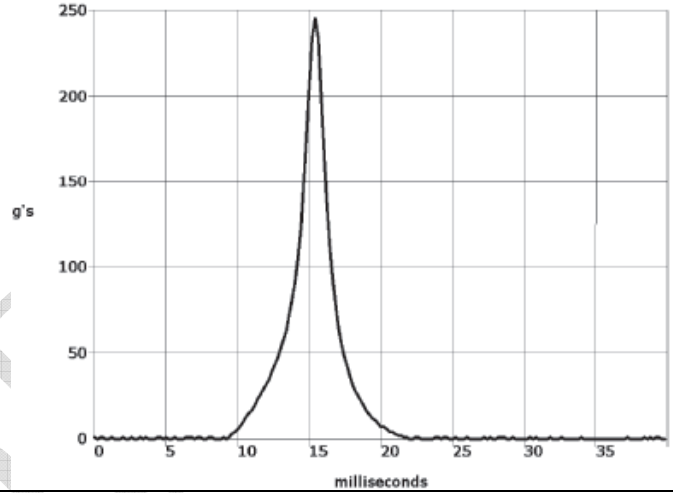
Test Results:

The time/acceleration curve at 4th test

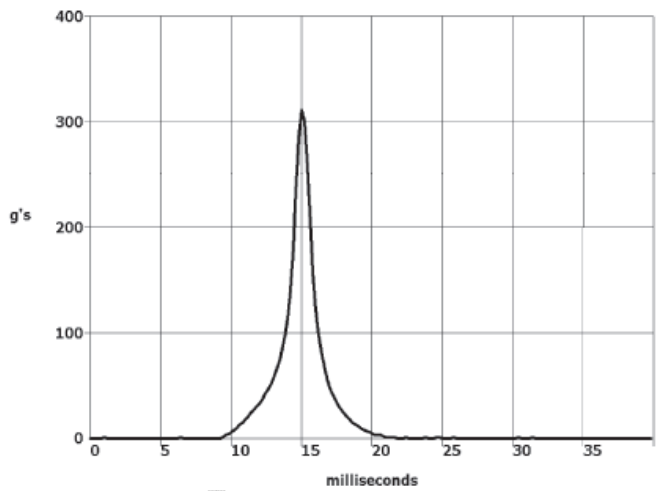
1st Drop
Height: 0.95m
Peak: 155
HIC: 544



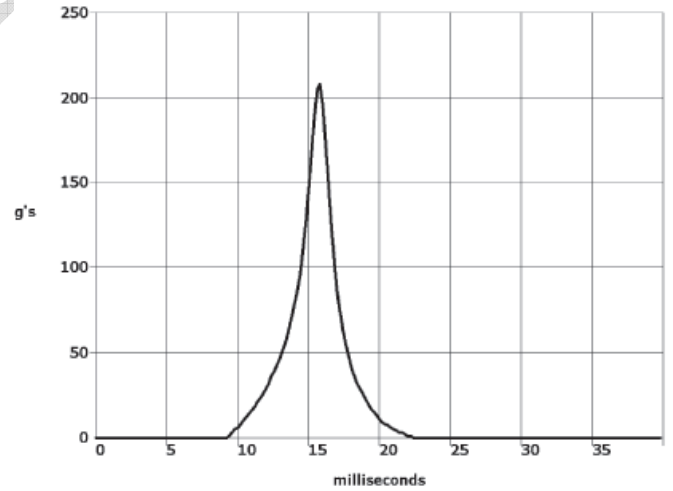
2nd Drop
Height: 1.05m
Peak: 246
HIC: 1021



3rd Drop
Height: 1.15m
Peak: 314
HIC: 1513



4th Drop
Height: 0.85m
Peak: 209
HIC: 785

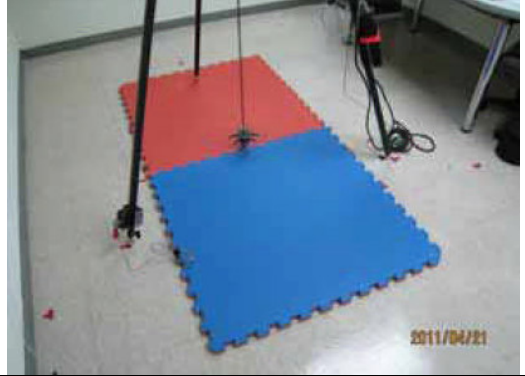


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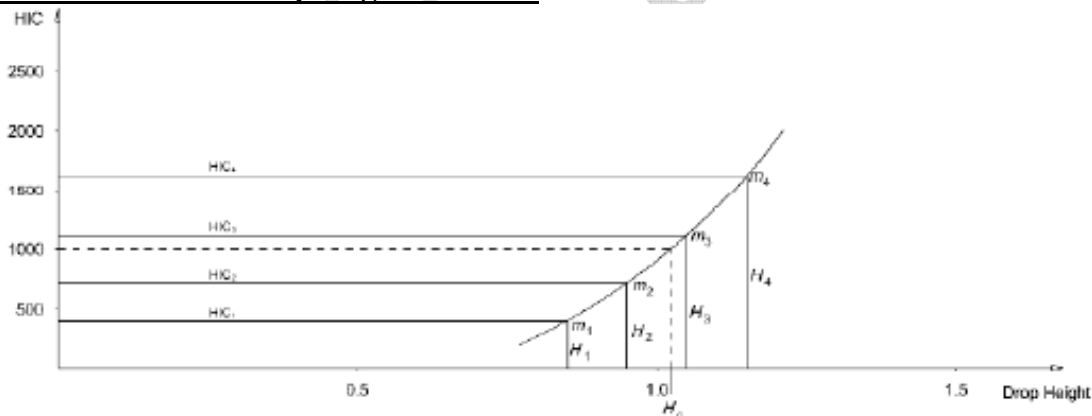
Test Results:

5 th test	<p><u>Method of fixing:</u> Take sample #1 and #2, and attached them with double-sided tapes on the edges of each sample, and place on a flat, rigid concrete floor.</p> <p><u>Position Description:</u> In the centre of a joint between sample #1(red surface) and #2(blue surface).</p>		
Drop Test	Height (m)	HIC	Requirements
1 st	0.85	399	HIC ≤ 1000
2 nd	0.95	713	
3 rd	1.05	1092	
4 th	1.15	1619	
Environmental Condition	Temp.: 22°C /R.H.: 70%		
Sample Condition	Dry		

Determination:

The Maximum height at Position A that meets $HIC \leq 1000$ is 0.9m.
(The results were rounded up to first decimal.)

The curve of HIC vs. drop height at 5th test



Key

- m* impact measurements
- H* drop height
- H_c* critical fall height

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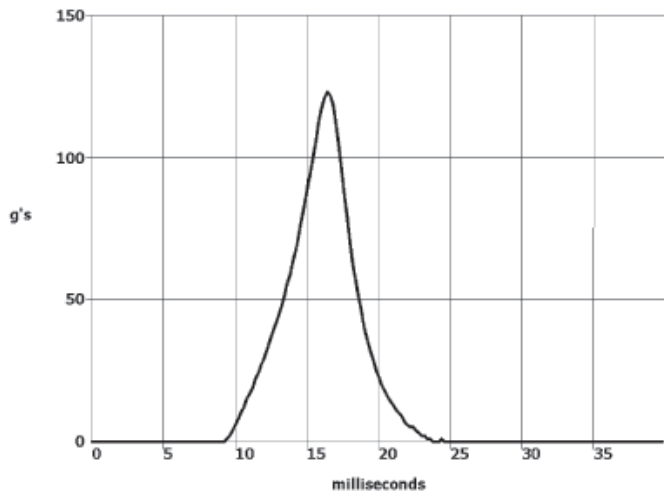
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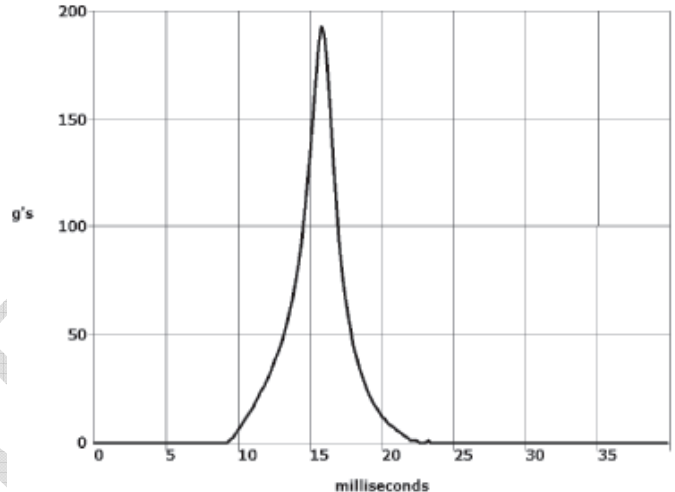
Test Results:

The time/acceleration curve at 5th test

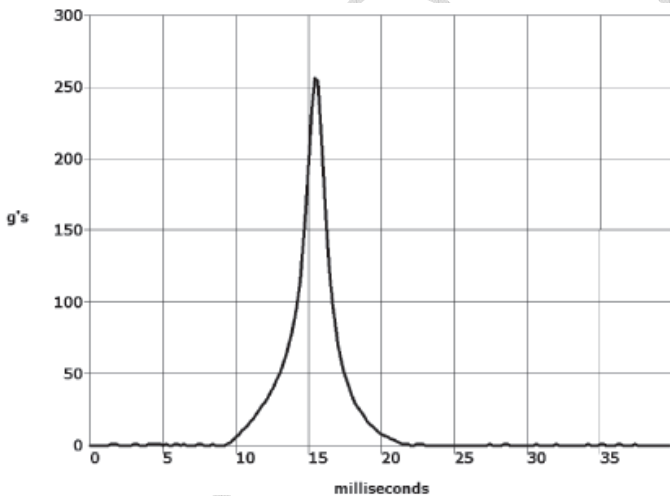
1st Drop
Height: 0.85m
Peak: 124
HIC: 399



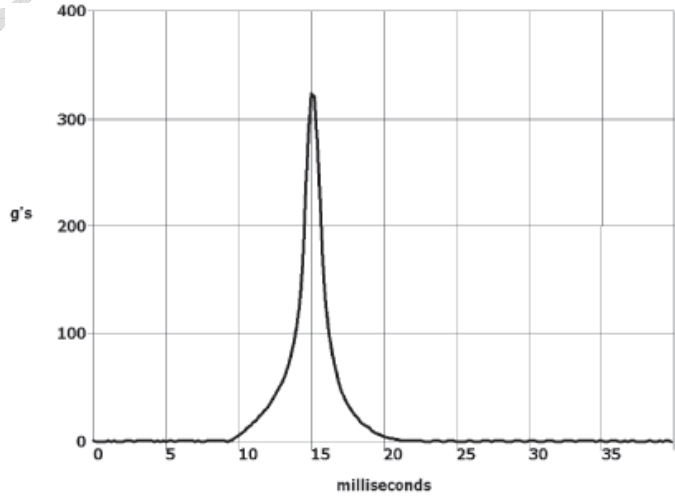
2nd Drop
Height: 0.95m
Peak: 194
HIC: 713



3rd Drop
Height: 1.05m
Peak: 260
HIC: 1092



4th Drop
Height: 1.15m
Peak: 330
HIC: 1619




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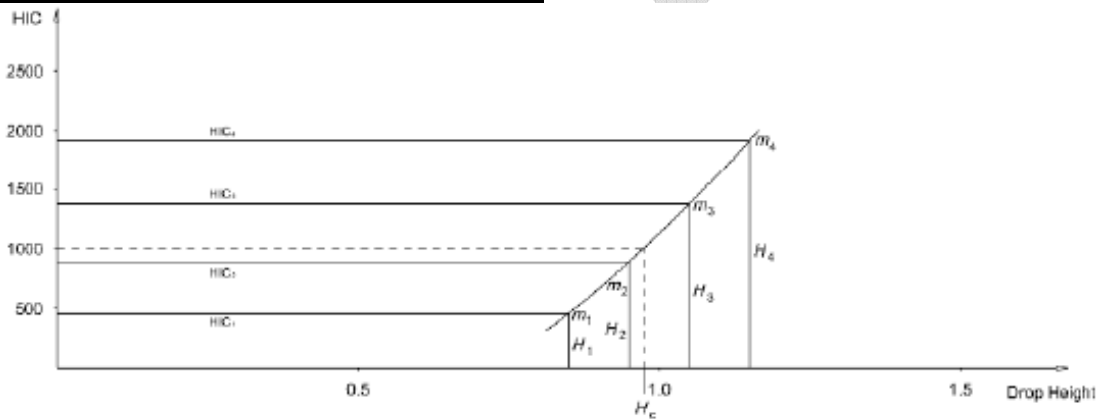
Test Results:

6 th test	<p>Method of fixing: Take sample #5 and #6, and attached them with double-sided tapes on the edges of each sample, and place on a flat, rigid concrete floor.</p> <p>Position Description: In the centre of a joint between sample #5(red surface) and #6(blue surface).</p>		
Drop Test	Height (m)	HIC	Requirements
1 st	0.85	458	HIC ≤ 1000
2 nd	0.95	888	
3 rd	1.05	1410	
4 th	1.15	1919	
Environmental Condition	Temp.: 24°C /R.H.: 70%		
Sample Condition	Dry		

Determination:

The Maximum height at Position A that meets $HIC \leq 1000$ is 0.9m.
(The results were rounded up to first decimal.)

The curve of HIC vs. drop height at 6th test



Key

- m* impact measurements
- H* drop height
- H_c* critical fall height

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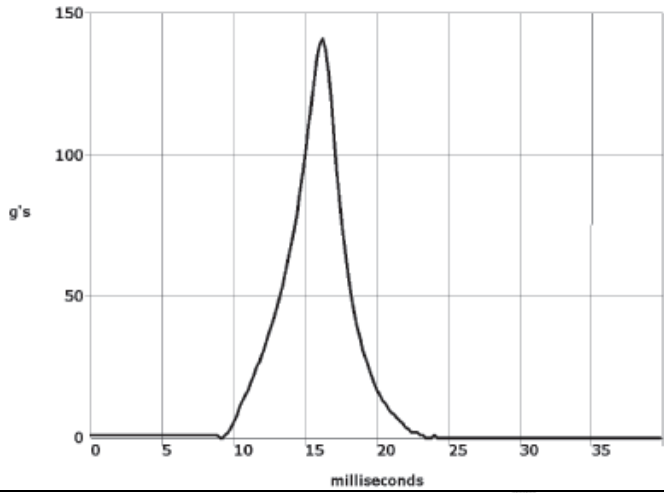
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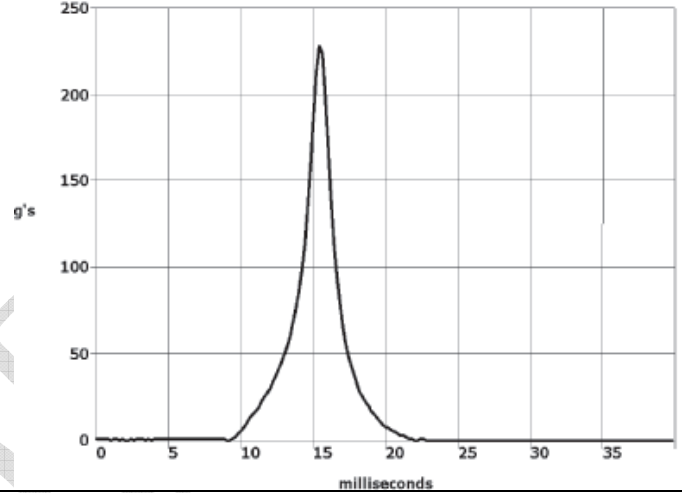
Test Results:

The time/acceleration curve at 6th test

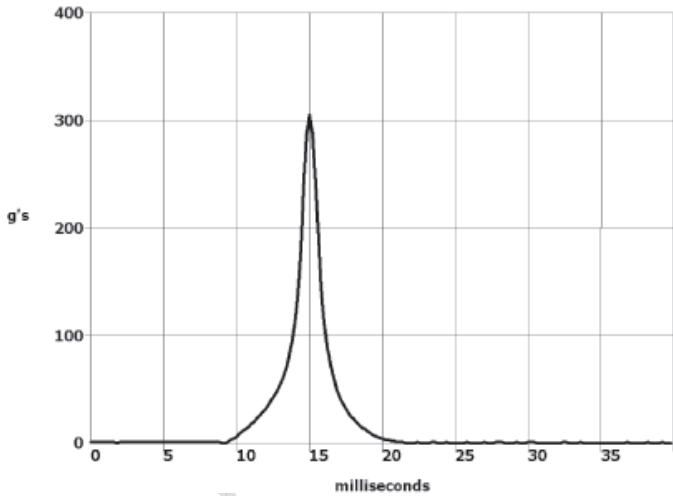
1st Drop
Height: 0.85m
Peak: 141
HIC: 458



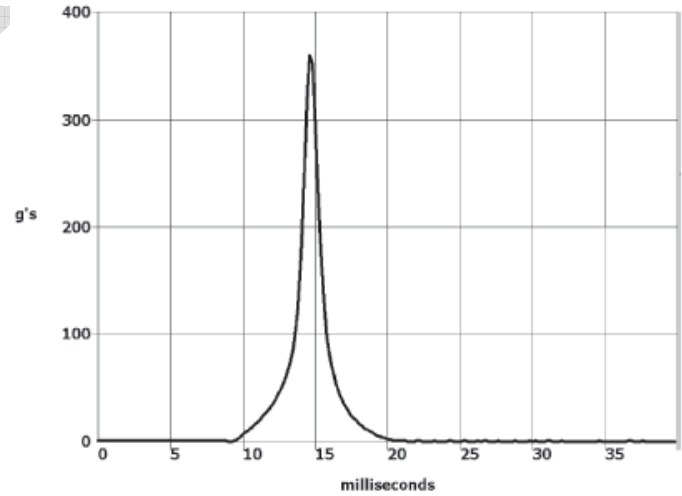
2nd Drop
Height: 0.95m
Peak: 230
HIC: 888



3rd Drop
Height: 1.05m
Peak: 307
HIC: 1410



4th Drop
Height: 1.15m
Peak: 367
HIC: 1919




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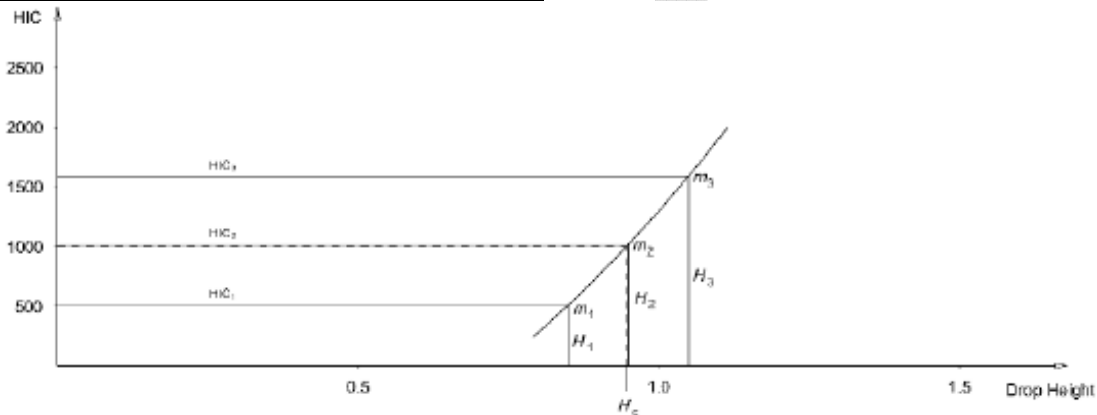
Test Results:

7 th test	<p>Method of fixing: Take sample #1, #2, #3 and #4, and attached them with double-sided tapes on the edges of each sample, and place on a flat, rigid concrete floor.</p> <p>Position Description: At the cross-joint of sample #1(red surface), #2(blue surface), #3(red surface) and #4(blue surface).</p>		
Drop Test	Height (m)	HIC	Requirements
1 st	0.85	511	HIC ≤ 1000
2 nd	0.95	1018	
3 rd	1.05	1590	
4 th	0.75	558	
Environmental Condition	Temp.: 24°C /R.H.: 70%		
Sample Condition	Dry		

Determination:

The Maximum height at Position A that meets $HIC \leq 1000$ is 0.8m.
 (The results were rounded up to first decimal.)

The curve of HIC vs. drop height at 7th test



Key

- m impact measurements
- H drop height
- H_c critical fall height

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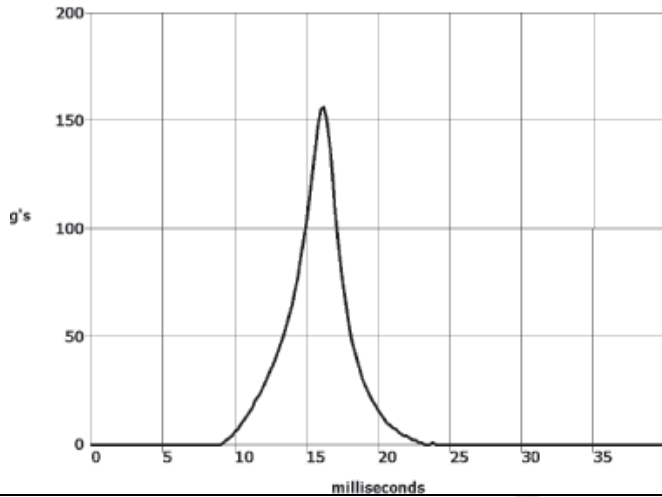
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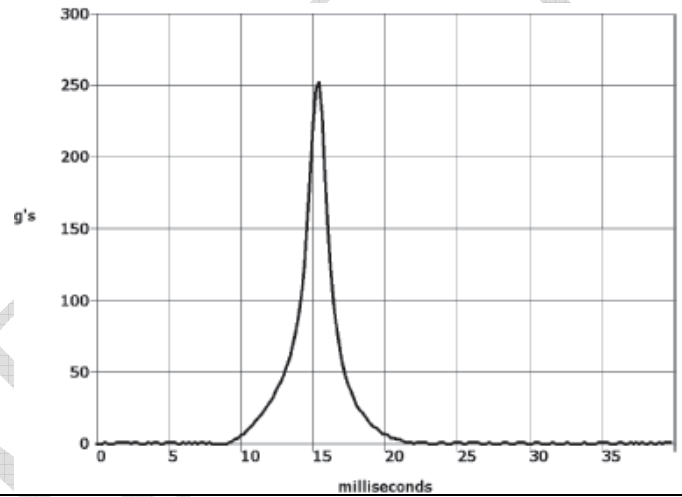
Test Results:

The time/acceleration curve at 7th test

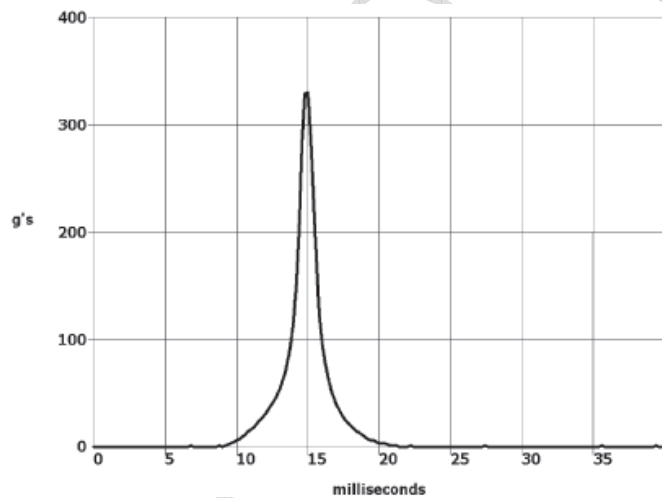
1st Drop
Height: 0.85m
Peak: 157
HIC: 511



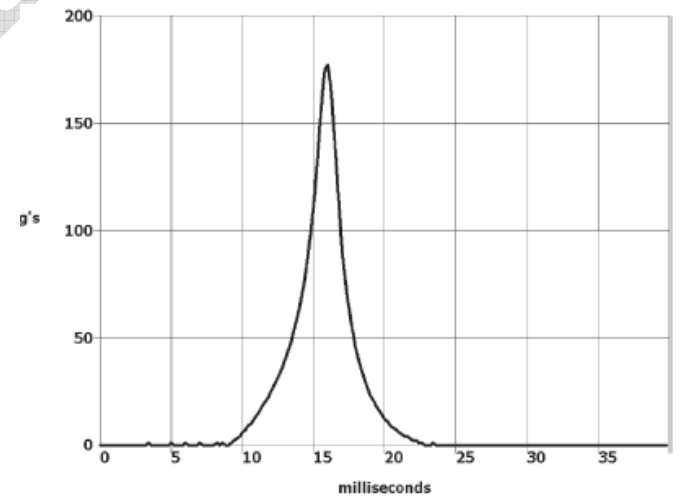
2nd Drop
Height: 0.95m
Peak: 255
HIC: 1018



3rd Drop
Height: 1.05m
Peak: 338
HIC: 1590



4th Drop
Height: 0.75m
Peak: 179
HIC: 558

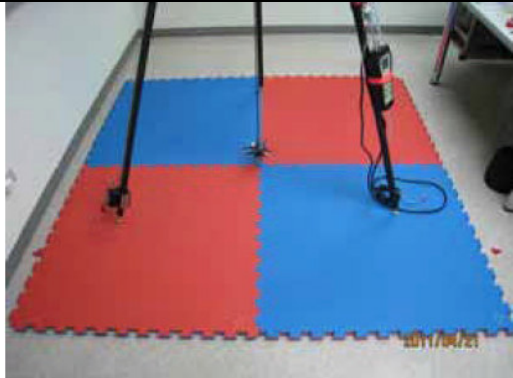


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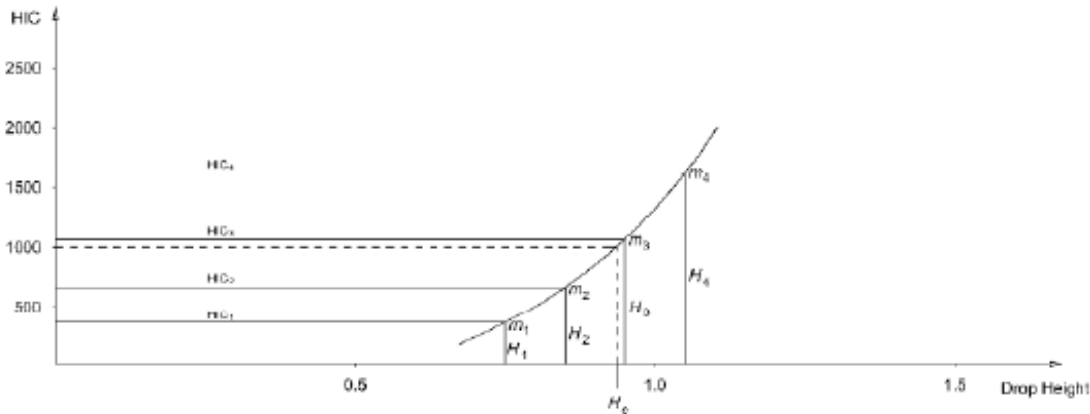
Test Results:

8 th test	<p>Method of fixing: Take sample #5, #6, #7 and #8, and attached them with double-sided tapes on the edges of each sample, and place on a flat, rigid concrete floor.</p> <p>Position Description: At the cross-joint of sample #5(red surface), #6(blue surface), #7(blue surface) and #8(red surface).</p>		
Drop Test	Height (m)	HIC	Requirements
1 st	0.75	349	HIC ≤ 1000
2 nd	0.85	657	
3 rd	0.95	1086	
4 th	1.05	1615	
Environmental Condition	Temp.: 24°C/R.H.: 74%		
Sample Condition	Dry		

Determination:

The Maximum height at Position A that meets $HIC \leq 1000$ is 0.8m.
(The results were rounded up to first decimal.)

The curve of HIC vs. drop height at 8th test



Key

- m impact measurements
- H drop height
- H_c critical fall height

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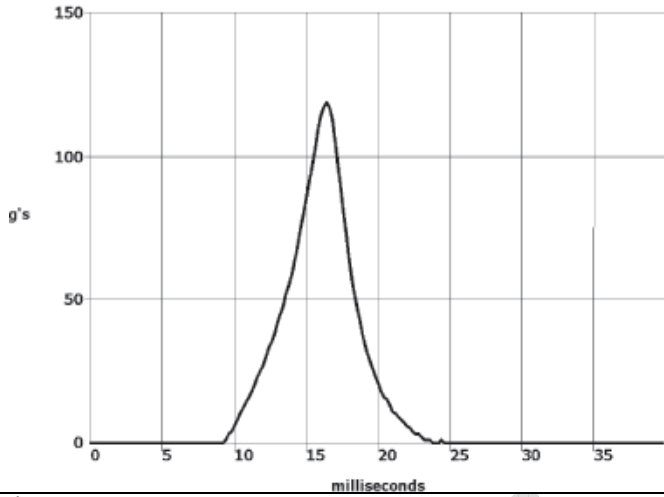
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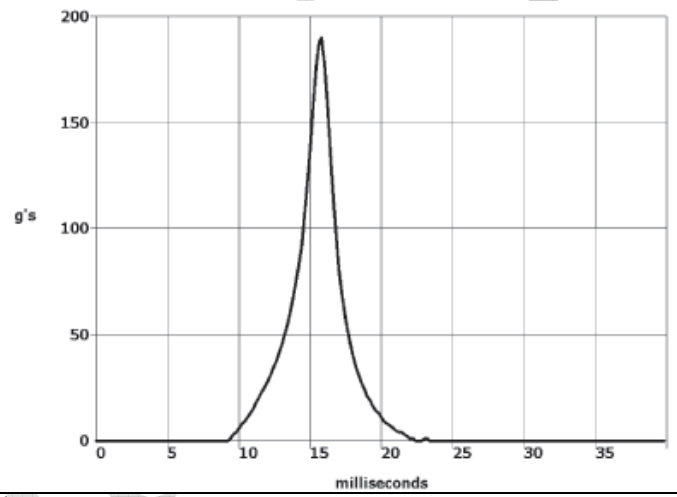
Test Results:

The time/acceleration curve at 8th test

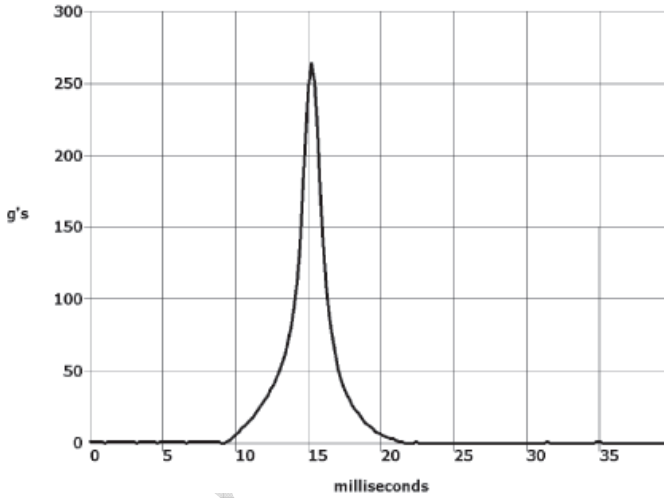
1st Drop
Height: 0.75m
Peak: 119
HIC: 349



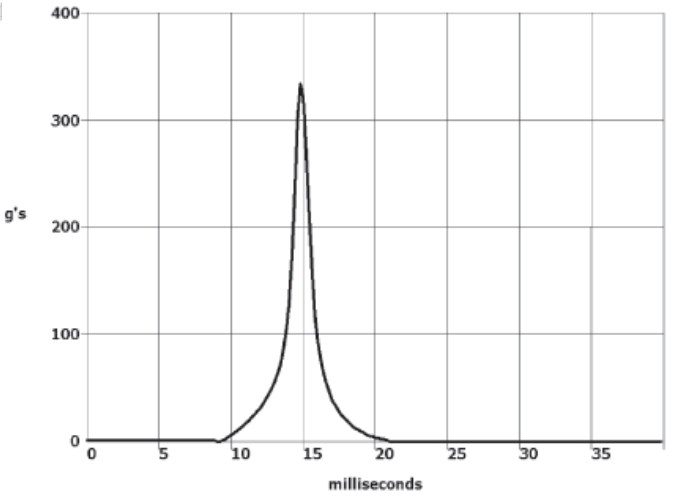
2nd Drop
Height: 0.85m
Peak: 191
HIC: 657



3rd Drop
Height: 0.95m
Peak: 265
HIC: 1086



4th Drop
Height: 1.05m
Peak: 337
HIC: 1615




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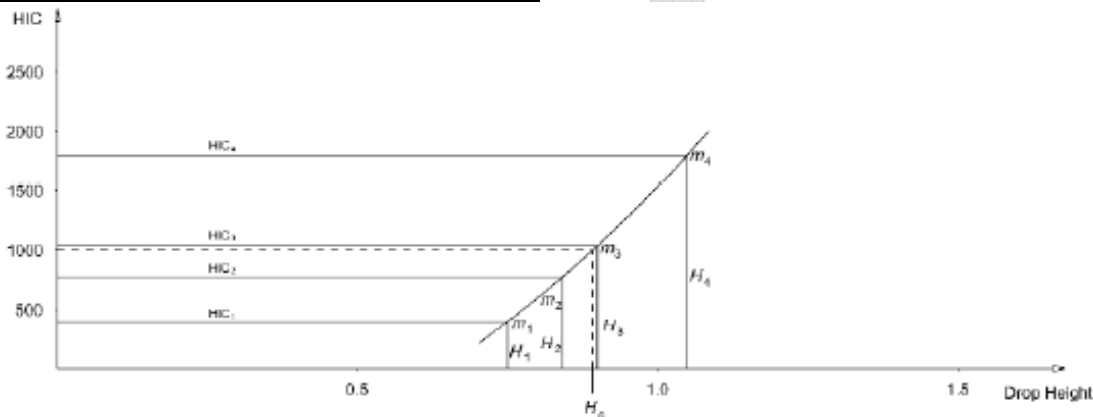
Test Results:

9 th test	<p>Method of fixing: Take sample #5, #6, #7 and #8, and attached them with double-sided tapes on the edges of each sample, and place on a flat, rigid concrete floor.</p> <p>Position Description: At the cross-joint of sample #5(red surface), #6(blue surface), #7(blue surface) and #8(red surface).</p>		
Drop Test	Height (m)	HIC	Requirements
1 st	0.75	395	HIC ≤ 1000
2 nd	0.85	777	
3 rd	0.90	1037	
4 th	1.05	1802	
Environmental Condition	Temp.: 24°C/R.H.: 74%		
Sample Condition	Dry		

Determination:

The Maximum height at Position A that meets $HIC \leq 1000$ is 0.8m.
 (The results were rounded up to first decimal.)

The curve of HIC vs. drop height at 9th test



Key

- m impact measurements
- H drop height
- H_c critical fall height

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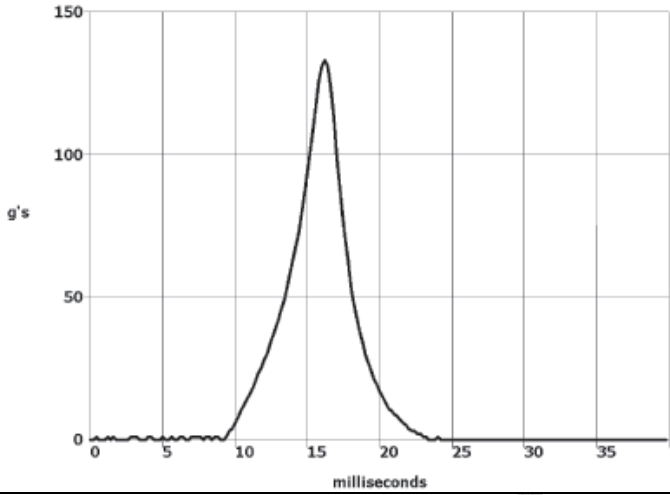
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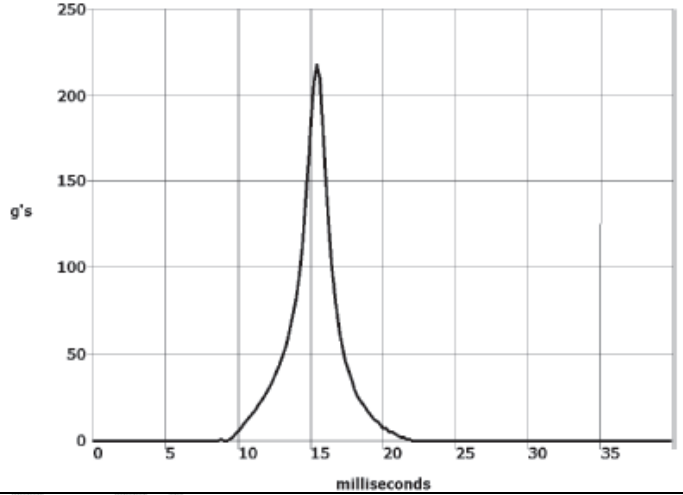
Test Results:

The time/acceleration curve at 9th test

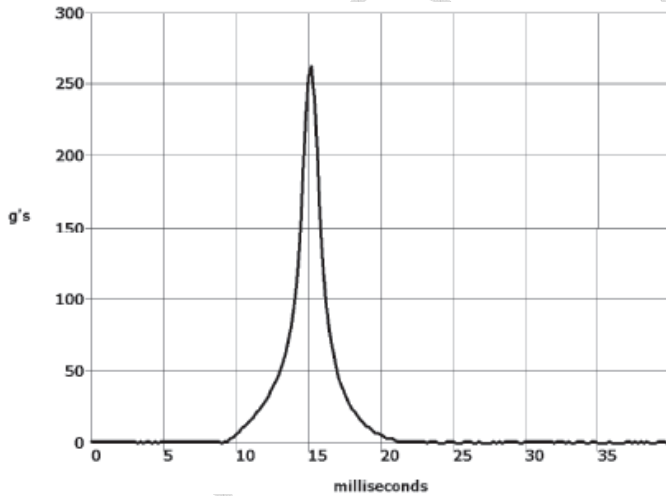
1st Drop
Height: 0.75m
Peak: 134
HIC: 395



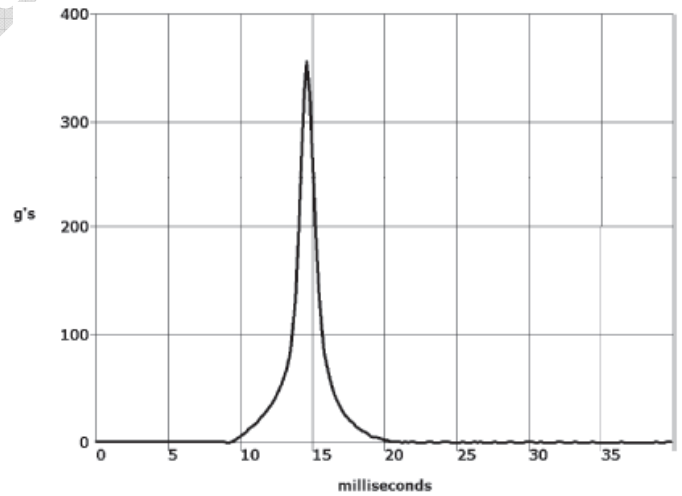
2nd Drop
Height: 0.85m
Peak: 219
HIC: 777



3rd Drop
Height: 0.90m
Peak: 264
HIC: 1037



4th Drop
Height: 1.05m
Peak: 358
HIC: 1802






--- See Next Page ---

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----- Picture page -----

 <p>2011/04/22</p>	 <p>2011/04/22</p>
Photo "A" Appearance of sample	Photo "B" Appearance of sample (Front (Back) View)
 <p>2011/04/22</p>	-- Blank --
Photo "C" Appearance of sample (Back (Front) View)	-- Blank --

--- End of Report ---