Surfacing Material Report – ASTM F1292-09

Client: RB Rubber Products, Inc.
Manufacturer: RB Rubber Products, Inc.
Manufacturing Location: McMinnville, OR
Commercial Name of product: 3.5 Inch Interlocking Playground Tile
with EPDM
Date of Manufacture: Unknown
No. of samples submitted: 4

TUV Report No.: Q11105916-1
Report Date: 7/21/2011
Test Date: 7/20 & 7/21/0211
Initial Test ☑
Follow up Test ☐ Ref Job:
Sample Selection ☐
Selection Date: N/A
Sample Receipt Date: 7/7/2011
Ambient Air Temperature: 23.1

Test Equipment:
Triax 2000 Accelerometer Calibration Due Date: 1/2012
Temperature Probe Calibration Due: 1/2012
Environmental Chamber No.: PLYP00101
Calibration Due Date: 8/11
Environmental Chamber No.: PLYP00069
Calibration Due Date: 8/11

Loose fill Material Sample Description:
Loose Fill Wood: ☐
Engineered Wood Fiber: ☐
Rubber: ☐
Sand: ☐
Gravel: ☐
Other: ☐
Un-compacted Depth: Inches
Compacted Depth: Inches

Unitary Sample Description:
Tiles ☑
Poured In Place ☐
Other ☐
Thickness: 3.5 Inch

Comments:
1. Determine the worst location on the tile to be impacted (Center,& Seam) based on Peak g-Max/HIC values.
2. All testing will be performed at the above determined worst case impact location per tile.

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 F1292-09 at the temperature and rating specified? Yes ☑ No ☐

Signature: Date: 7/26/2011
Reviewed by: Date: 7/26/2011
# Determine Worst Case Location (1 ambient drop: Center, Corner, Seam of Tile)

<table>
<thead>
<tr>
<th>Location</th>
<th>Height (ft)</th>
<th>Peak g-Max</th>
<th>HIC</th>
<th>Velocity (ft/s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Center</td>
<td>8</td>
<td>109</td>
<td>601</td>
<td>22.6</td>
</tr>
<tr>
<td>Seam</td>
<td>8</td>
<td>106</td>
<td>585</td>
<td>22.4</td>
</tr>
</tbody>
</table>

**Location tested:** Center

<table>
<thead>
<tr>
<th>Drop</th>
<th>Specified Drop Height (ft.L)</th>
<th>Reference Temperature -6°C</th>
<th>Reference Temperature 23°C</th>
<th>Reference Temperature 49°C</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>g-Max</td>
<td>HIC</td>
<td>Velocity (ft/s)</td>
</tr>
<tr>
<td>1</td>
<td>8</td>
<td>121</td>
<td>724</td>
<td>22.6</td>
</tr>
<tr>
<td>2</td>
<td>8</td>
<td>128</td>
<td>774</td>
<td>22.6</td>
</tr>
<tr>
<td>3</td>
<td>8</td>
<td>126</td>
<td>745</td>
<td>22.6</td>
</tr>
<tr>
<td>Average</td>
<td></td>
<td>127</td>
<td>759.5</td>
<td></td>
</tr>
</tbody>
</table>

Measured Surface Temperature: -6°C Max. Change from reference +5°C 23°C Max. Change from reference +3°C 49°C Max. Change from reference -3°C

Sample Condition: DRY

<table>
<thead>
<tr>
<th>Drop</th>
<th>One foot over (FL)</th>
<th>Reference Temperature -6°C</th>
<th>Reference Temperature 23°C</th>
<th>Reference Temperature 49°C</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>g-Max</td>
<td>HIC</td>
<td>Velocity (ft/s)</td>
</tr>
<tr>
<td>1</td>
<td>N/A</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td></td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

Measured Surface Temperature: °C Max. Change from reference +5°C °C Max. Change from reference +3°C °C Max. Change from reference -3°C

Sample Condition:

---

[Image: TÜV SÜD America]

Revision 4 5/15/06
Surfacing Material Report – ASTM F1292-09

Client: RB Rubber Products, Inc.
Manufacturer: RB Rubber Products, Inc.
Manufacturing Location: McMinnville, OR
Commercial Name of product: 3.5 Inch Interlocking Playground Tile
                   - Solid SBR
Date of Manufacture: Unknown
No. of samples submitted: 4

TUV Report No.: Q11105916-2
Report Date: 7/21/2011
Test Date: 7/20, 7/21/2011
Initial Test ☑
Follow up Test ☐
Ref Job: ☐
Sample Selection ☐
Selection Date: N/A
Sample Receipt Date: 7/7/2011
Ambient Air Temperature: 23.1

Test Equipment:
Triax 2000 Accelerometer Calibration Due Date: 1/2012
Temperature Probe Calibration Due: 1/2012

Environmental Chamber No.: PLYP00101
Calibration Due Date: 8/2011
Environmental Chamber No.: PLYP00069
Calibration Due Date: 8/2011

Loose fill Material Sample Description:
Loose Fill Wood: ☐
Engineered Wood Fiber: ☐
Rubber: ☐
Sand: ☐
Gravel: ☐
Other: ☐
Un-compacted Depth: Inches
Compacted Depth: Inches

Unitary Sample Description:
Tiles ☑
Poured in Place ☐
Other ☐
Thickness: 3.5 Inch

Comments:
1. Determine the worst location on the tile to be impacted (Center,& Seam) based on Peak g-Max/HIC values.
2. All testing will be performed at the above determined worst case impact location per tile.

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 F1292-09 at the temperature and rating specified? Yes ☑ No ☐

Signature: ___________________________ Date: __________
Reviewed by: _________________________ Date: __________
### Determine Worst Case Location (1 ambient drop: Center, Corner, Seam of Tile)

<table>
<thead>
<tr>
<th>Location</th>
<th>Height (ft)</th>
<th>Peak g-Max</th>
<th>HIC</th>
<th>Velocity (ft/s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Center</td>
<td>8</td>
<td>116</td>
<td>696</td>
<td>22.6</td>
</tr>
<tr>
<td>Seam</td>
<td>8</td>
<td>114</td>
<td>692</td>
<td>22.5</td>
</tr>
</tbody>
</table>

#### Drop

<table>
<thead>
<tr>
<th>Drop</th>
<th>Specified Drop Height (ft)</th>
<th>Reference Temperature -6°C</th>
<th>Reference Temperature 23°C</th>
<th>Reference Temperature 49°C</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>g-Max</td>
<td>HIC</td>
<td>Velocity (ft/s)</td>
</tr>
<tr>
<td>1</td>
<td>8</td>
<td>110</td>
<td>594</td>
<td>22.5</td>
</tr>
<tr>
<td>2</td>
<td>8</td>
<td>117</td>
<td>639</td>
<td>22.6</td>
</tr>
<tr>
<td>3</td>
<td>8</td>
<td>115</td>
<td>634</td>
<td>22.6</td>
</tr>
<tr>
<td></td>
<td>Average</td>
<td>116</td>
<td>636.5</td>
<td>22.5</td>
</tr>
</tbody>
</table>

#### Measured Surface Temperature

<table>
<thead>
<tr>
<th>Drop</th>
<th>One foot over (ft)</th>
<th>Reference Temperature -6°C</th>
<th>Reference Temperature 23°C</th>
<th>Reference Temperature 49°C</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>g-Max</td>
<td>HIC</td>
<td>Velocity (ft/s)</td>
</tr>
<tr>
<td>1</td>
<td>N/A</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Average</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

#### Measured Surface Temperature

<table>
<thead>
<tr>
<th>Drop</th>
<th>One foot under (ft)</th>
<th>Reference Temperature -6°C</th>
<th>Reference Temperature 23°C</th>
<th>Reference Temperature 49°C</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>g-Max</td>
<td>HIC</td>
<td>Velocity (ft/s)</td>
</tr>
<tr>
<td>1</td>
<td>N/A</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Average</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

#### Sample Condition:

- DRY
- DRY
- DRY

---

[Image of TÜV SÜD logo]

America
Surfacing Material Report – ASTM F1292-09

Client: RB Rubber Products, Inc.
Manufacturer: RB Rubber Products, Inc.
Manufacturing Location: McMinnville, OR
Commercial Name of product: 2.5 Inch Interlocking Playground Tile with EPDM
Date of Manufacture: Unknown
No. of samples submitted: 4

TUV Report No.: Q11105916-3
Report Date: 7/21/2011
Test Date: 7/20, 7/21/2011
Initial Test:
Follow up Test:
Ref Job:
Sample Selection:
Selection Date: N/A
Sample Receipt Date: 7/7/2011
Ambient Air Temperature: 23.1

Test Equipment:
Triax 2000 Accelerometer Calibration Due Date: 1/2012
Temperature Probe Calibration Due: 1/2012
Environmental Chamber No.: PLYP000101
Calibration Due Date: 8/2011
Environmental Chamber No.: PLYP00069
Calibration Due Date: 8/2011

Loose fill Material Sample Description:
Loose Fill Wood:
Engineered Wood Fiber:
Rubber:
Sand:
Gravel:
Other:

Un-compacted Depth: Inches
Compacted Depth: Inches

Unitary Sample Description:

Tiles ☑
Pour in place:
Other:

Thickness: 2.5 Inch

Comments:
1. Determine the worst location on the tile to be impacted (Center, & Seam) based on Peak g-Max/HIC values.
2. All testing will be performed at the above determined worst case impact location per tile.

The above described sample was tested at: 6 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 F1292-09 at the temperature and rating specified? Yes ☑

Signature: __________________________ Date: 7/24/2011
Reviewed by: __________________________ Date: 7/26/11
**Client:** RB Rubber Products, Inc.  
**Manufacturer:** RB Rubber Products, Inc.  
**Test Date:** 7/20 & 7/21/0211

**Determine Worst Case Location (1 ambient drop: Center, Corner, Seam of Tile)**

<table>
<thead>
<tr>
<th>Location</th>
<th>Height (ft)</th>
<th>Peak g-Max</th>
<th>HIC</th>
<th>Velocity (ft/s)</th>
<th>Location tested:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Center</td>
<td>6</td>
<td>133</td>
<td>687</td>
<td>19.5</td>
<td>Center</td>
</tr>
<tr>
<td>Seam</td>
<td>6</td>
<td>131</td>
<td>687</td>
<td>19.5</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Drop</th>
<th>Specified Drop Height (ft)</th>
<th>Reference Temperature -6°C</th>
<th>Reference Temperature 23°C</th>
<th>Reference Temperature 49°C</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>g-Max</td>
<td>HIC</td>
<td>Velocity (ft/s)</td>
</tr>
<tr>
<td>1</td>
<td>6</td>
<td>126</td>
<td>627</td>
<td>19.7</td>
</tr>
<tr>
<td>2</td>
<td>6</td>
<td>136</td>
<td>698</td>
<td>19.7</td>
</tr>
<tr>
<td>3</td>
<td>6</td>
<td>139</td>
<td>716</td>
<td>19.7</td>
</tr>
<tr>
<td>Average</td>
<td></td>
<td>137.5</td>
<td>706</td>
<td></td>
</tr>
</tbody>
</table>

**Measured Surface Temperature**
-6°C: Max. Change from reference +5°C  
23°C: Max. Change from reference +3°C  
49°C: Max. Change from reference -3°C

**Sample Condition:** DRY

<table>
<thead>
<tr>
<th>Drop</th>
<th>One foot over (ft)</th>
<th>Reference Temperature -6°C</th>
<th>Reference Temperature 23°C</th>
<th>Reference Temperature 49°C</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>g-Max</td>
<td>HIC</td>
<td>Velocity (ft/s)</td>
</tr>
<tr>
<td>1</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td></td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

**Measured Surface Temperature**
-6°C: Max. Change from reference +5°C  
23°C: Max. Change from reference +3°C  
49°C: Max. Change from reference -3°C

**Sample Condition:**

---

**TUV SUD America**

Revision 4 5/15/06  
Page 2 of 2
Surfacing Material Report – ASTM F1292-09

Client: RB Rubber Products, Inc.
Manufacturer: RB Rubber Products, Inc.
Manufacturing Location: McMinnville, OR
Commercial Name of product: 2.5 Inch Interlocking Playground Tile
- Solid SBR
Date of Manufacture: Unknown
No. of samples submitted: 4

TUV Report No.: Q1105916-4
Report Date: 7/21/2011
Test Date: 7/20, & 7/21/2011
Initial Test ☑
Follow up Test ☐ Ref Job:
Sample Selection ☐
Selection Date: N/A
Sample Receipt Date: 7/7/2011
Ambient Air Temperature: 23.1

Test Equipment:
Triax 2000 Accelerometer Calibration Due Date: 1/2012
Temperature Probe Calibration Due: 1/2012
Environmental Chamber No.: PLYP00101
Calibration Due Date: 8/2011
Environmental Chamber No.: PLYP00069
Calibration Due Date: 8/2011

Loose fill Material Sample Description:
Loose Fill Wood: ☐
Engineered Wood Fiber: ☐
Rubber: ☐
Sand: ☐
Gravel: ☐
Other: ☐
Un-compacted Depth: Inches
Compacted Depth: Inches

Unitary Sample Description:
Tiles ☑
Poured in Place ☐
Other ☐
Thickness: 2.5 inch

Comments:
1. Determine the worst location on the tile to be impacted (Center, & Seam) based on Peak g-Max/HIC values.
2. All testing will be performed at the above determined worst case impact location per tile.

The above described sample was tested at: 6 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 F1292-09 at the temperature and rating specified? Yes ☑ No ☐

Signature: [Signature]
Date: 7/14/06

Reviewed by: [Signature]
Date: 7/24/06

Revision 4 5/15/06
**Determine Worst Case Location (1 ambient drop: Center, Corner, Seam of Tile)**

<table>
<thead>
<tr>
<th>Location</th>
<th>Height (ft)</th>
<th>Peak g-Max</th>
<th>HIC</th>
<th>Velocity (ft/s)</th>
<th>Location tested:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Center</td>
<td>6</td>
<td>130</td>
<td>674</td>
<td>19.6</td>
<td>Center</td>
</tr>
<tr>
<td>Seam</td>
<td>6</td>
<td>131</td>
<td>671</td>
<td>19.6</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Drop</th>
<th>Specified Drop Height (ft)</th>
<th>Reference Temperature -6°C</th>
<th></th>
<th>Reference Temperature 23°C</th>
<th></th>
<th>Reference Temperature 49°C</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>g-Max</td>
<td>HIC</td>
<td>Velocity (ft/s)</td>
<td>g-Max</td>
<td>HIC</td>
<td>Velocity (ft/s)</td>
</tr>
<tr>
<td>1</td>
<td>6</td>
<td>121</td>
<td>590</td>
<td>19.7</td>
<td>143</td>
<td>768</td>
</tr>
<tr>
<td>2</td>
<td>6</td>
<td>134</td>
<td>667</td>
<td>19.7</td>
<td>149</td>
<td>797</td>
</tr>
<tr>
<td>3</td>
<td>6</td>
<td>137</td>
<td>678</td>
<td>19.7</td>
<td>151</td>
<td>811</td>
</tr>
<tr>
<td>Average</td>
<td>135.5</td>
<td>672.5</td>
<td></td>
<td>150</td>
<td>804</td>
<td></td>
</tr>
</tbody>
</table>

**Measured Surface Temperature**
- -6°C Max. Change from reference +5°C
- 23°C Max. Change from reference +3°C
- 49°C Max. Change from reference -3°C

**Sample Condition:**
- DRY

---

**Drop**

<table>
<thead>
<tr>
<th>Drop</th>
<th>One foot over (ft)</th>
<th>Reference Temperature -6°C</th>
<th></th>
<th>Reference Temperature 23°C</th>
<th></th>
<th>Reference Temperature 49°C</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>g-Max</td>
<td>HIC</td>
<td>Velocity (ft/s)</td>
<td>g-Max</td>
<td>HIC</td>
<td>Velocity (ft/s)</td>
</tr>
<tr>
<td>1</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>0</td>
<td>0</td>
<td></td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

**Measured Surface Temperature**
- °C Max. Change from reference +5°C
- °C Max. Change from reference +3°C
- °C Max. Change from reference -3°C

**Sample Condition:**
- DRY

---

**Drop**

<table>
<thead>
<tr>
<th>Drop</th>
<th>One foot under (ft)</th>
<th>Reference Temperature -6°C</th>
<th></th>
<th>Reference Temperature 23°C</th>
<th></th>
<th>Reference Temperature 49°C</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>g-Max</td>
<td>HIC</td>
<td>Velocity (ft/s)</td>
<td>g-Max</td>
<td>HIC</td>
<td>Velocity (ft/s)</td>
</tr>
<tr>
<td>1</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>0</td>
<td>0</td>
<td></td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

**Measured Surface Temperature**
- °C Max. Change from reference +5°C
- °C Max. Change from reference +3°C
- °C Max. Change from reference -3°C

**Sample Condition:**
- DRY