America

TÜV SÜD America Inc.

Product Safety Services 1755 Atlantic Blvd.

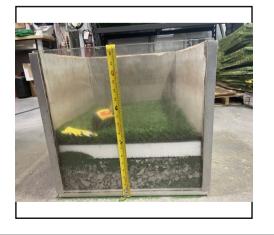
Auburn Hills, MI 48326

Phone: (616) 546-4600

IPEMA Impact Attenuation Report – ASTM F1292-22

| ite Grass | TUV Report No.: <u>72186757-3a</u> | | | | | | |
|---|---|---|--|--|--|--|--|
| | Report Date: 2/9/2023 | | | | | | |
| | Test Date: 2/9/2023 | | | | | | |
| | | | | | | | |
| 00064-66) | Sample Receipt Date: 1/27/2023 | | | | | | |
| i | | | | | | | |
| T . | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| ose Fill Ma | terial Sample Description: | | | | | | |
| | Un-compacted Depth: Inches | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | Compacted Depth: Inches | | | | | | |
| | | | | | | | |
| | | | | | | | |
| Unitory | Sample Description: | | | | | | |
| _ | | | | | | | |
| | | | | | | | |
| | Top Layer: | | | | | | |
| | Base Layer: | | | | | | |
| <u> Turf Syste</u> | m Sample Description: | | | | | | |
| \checkmark | Turf Pile Height: <u>1.8125</u> Inches | | | | | | |
| \checkmark | Pad Thickness: 2.0 Inches | | | | | | |
| | | | | | | | |
| \checkmark | Aggregate: 4.0 Inches | | | | | | |
| \checkmark | Aggregate: <u>4.0</u> Inches Infill Amount: <u>2.0</u> Lbs./Sq. Ft. | | | | | | |
| | | | | | | | |
| ces of turf; fifty five | Infill Amount: 2.0 Lbs./Sq. Ft. | | | | | | |
| ces of turf; fifty five | Infill Amount: 2.0 Lbs./Sq. Ft. Infill Type: envirofill (55) 2.0 inch center pads, twenty seven (27) 2.0 inch seamed pads, twenty seven (27) 2.0 inch intersection pad, and 15 mesh) – over 2.0 inch Tiger Playground Pad – overlaying 4in. of compacted aggregate. Total system depth/thickness o | | | | | | |
| ces of turf; fifty five I (grain size #12/20 was determine DVe described | Infill Amount: 2.0 Lbs./Sq. Ft. Infill Type: envirofill (55) 2.0 inch center pads, twenty seven (27) 2.0 inch seamed pads, twenty seven (27) 2.0 inch intersection pad, and 15 mesh) – over 2.0 inch Tiger Playground Pad – overlaying 4in. of compacted aggregate. Total system depth/thickness o | f 7.8125in. specifi | | | | | |
| was determine to ove described to not close | Infill Amount: <u>2.0</u> Lbs./Sq. Ft. Infill Type: envirofill (55) 2.0 inch center pads, twenty seven (27) 2.0 inch seamed pads, twenty seven (27) 2.0 inch intersection pad, and 15 mesh) – over 2.0 inch Tiger Playground Pad – overlaying 4in. of compacted aggregate. Total system depth/thickness o ed to be: <u>8</u> <u>Ft.</u> Is samples at the time of testing and at the temperature(s) reported. The results are | f 7.8125in. specifi | | | | | |
| was determine to ove described to not close | Infill Amount: <u>2.0</u> Lbs./Sq. Ft. Infill Type: envirofill (55) 2.0 inch center pads, twenty seven (27) 2.0 inch intersection pad, and 15 mesh) – over 2.0 inch Tiger Playground Pad – overlaying 4in. of compacted aggregate. Total system depth/thickness o ed to be: <u>8</u> <u>Ft.</u> It samples at the time of testing and at the temperature(s) reported. The results are easy match the described samples will perform differently. The following data sheet p | f 7.8125in. specific | | | | | |
| | | Selection: Initial: Follow up Ref Job: 00064-66) Sample Receipt Date: 1/27/2023 Ambient Air Temperature: 25.6 °C Humidity: 24 % Test Equipment: Calibration Due Date: Calibration Due Date: 8/30/2023 PLYP00226 Environmental Chamber No.: PLYP00069 Z Calibration Due Date: 8/30/2023 See Fill Material Sample Description: Un-compacted Depth: Inches Compacted Depth: Inches Compacted Depth: Top Layer: Base Layer: Base Layer: Turf System Sample Description: Turf Pile Height: 1.8125 Inches | | | | | |

TUV Report No: 72186757-3a Participant: Polyloom dba Tencate Grass Manufacturing Location ID: Dayton, TN Test Date: 2/9/2023 Reference Temperature -4°C, (25°F) Reference Temperature 23°C, (73°F) Reference Temperature 49°C, (120°F) Critical Theoretical Theoretical Theoretical Drop Fall Height Velocity Velocity Velocity G-Max HIC Drop Height G-Max HIC Drop Height G-Max HIC Drop Height (Ft.) (ft/s) (ft/s) (ft/s) (ft.) (ft.) (ft.) 1 8 115 700 22.8 8.08 105 613 22.7 8.01 135 835 22.8 8.08 2 8 120 738 22.8 8.08 123 773 22.8 8.08 116 22.7 8.01 716 3 8 116 700 22.8 8.08 128 773 22.8 8.08 127 768 22.8 8.08 118.0 Average 719.0 125.5 773.0 121.5 742.0 Max. Change from reference + 3°C, Max. Change from reference + 5°C, Max. Change from reference -4°C 23°C 49°C Measured Surface Temperature (5°F) (5°F) -3°C, (-5°F) Dry Dry Dry Sample Condition: Reference Temperature -4°C, (25°F) Reference Temperature 23°C, (73°F) Reference Temperature 49°C, (120°F) One foot over Theoretical Theoretical Theoretical Drop Velocity Velocity Velocity (Ft.) G-Max HIC Drop Height G-Max HIC Drop Height G-Max HIC Drop Height (ft/s) (ft/s) (ft/s)(ft.) (ft.) (ft.) 24.3 1 24.2 9.10 24.2 9.18 9 123 836 153 1066 9.10 156 1058 2 9.10 9 24.1 9.03 158 24.2 9.10 162 24.2 126 869 1139 1079 9.10 3 9 9.10 125 849 24.2 9.10 156 1086 24.2 166 1111 24.2 157.0 1095.0 125.5 859.0 1112.5 164.0 Average Max. Change from reference + 5°C, Max. Change from reference + 3°C, Max. Change from reference Measured Surface Temperature -4°C 23°C 49°C (5°F) -3°C, (-5°F) (5°F) Dry Dry Dry Sample Condition: Reference Temperature -4°C, (25°F) Reference Temperature 23°C, (73°F) Reference Temperature 49°C, (120°F) One foot under Theoretical Theoretical Theoretical Drop Velocity Velocity Velocity (Ft.) HIC G-Max HIC G-Max HIC G-Max Drop Height Drop Height Drop Height (ft/s) (ft/s) (ft/s) (ft.) (ft.) (ft.) 106 21.4 21.4 7.12 101 21.4 1 7 619 7.12 117 724 584 7.12 2 7 7.19 575 7.19 113 658 21.5 7.19 117 676 21.5 104 21.5 3 7 115 659 7.12 649 7.19 104 578 21.5 7.19 21.4 114 21.5 Average 114.0 658.5 115.5 662.5 104.0 576.5 Max. Change from reference + 5°C, Max. Change from reference + 3°C, Max. Change from reference Measured Surface Temperature -4°C 23°C 49°C -3°C, (-5°F) (5°F) (5°F) Dry Dry Sample Condition: Dry









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

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

| Participant:Polyloom dba Tencate Grass Main Office Address: <u>1131 Broadway St.</u> <u>Dayton, TN 37321</u> Phone: <u>423.413.7028</u> Manufacturing Location ID; <u>Dayton, TN</u> Commercial Name of Product: <u>Diamond Light (C000064-66)</u> Date of Manufacture: <u>Unknown</u> No. of samples submitted: <u>See Comments</u> | Project No.:72186757-3b Report Date:2/9/2023 Test Date:2/9/2023 Selection: Initial Test: Follow up Test: Ref Job: Sample Receipt Date:1/27/2023 Ambient Air Temperature:25.1°C Humidity: 24 % |
|---|---|
| <u>Test Eq</u> | uipment: |
| 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 |
| Unitar <u>y Sample I</u> | Layer Description: |
| Tiles: | Total Thickness: 7.8125in. |
| Poured in Place: | Top Layer: See Comments |
| Turf: 🗸 | Base Layer: See Comments |
| at the locations indicated on Pages 2 and 3. Impact Location: Least Favorable Impact Location was determined at: | <u>Reference Temperature:</u> 23°C |
| 2.0 inch intersection pad, and 150lbs infill. 5.) Diamond Light (1.8125in. Pile Height)– infilled with 2.0 lbs per sq. ft. of Envirofill infill (grain si 6.) Maximum Critical Fall Height report is 72186757-3a | rf; fifty five (55) 2.0 inch center pads, twenty seven (27) 2.0 inch seamed pads, twenty seven (27) ize #12/20 mesh) – over 2.0 inch Tiger Playground Pad – overlaying 4in. of compacted aggregate. |
| | ch the described samples will perform differently. The following data sheet provides |
| Sample in compliance with ASTM F1292-22 at the temperature and rating sp | ecified? Yes 🗹 No 🗌 |
| Tim Lockstein Title: Project | ct Safety Engineer Date: 2/9/2023 |
| Reviewed by: <u>Simuthery Frudia</u> Title: Project | ct Engineering Technician Date: 2/22/2023 |
| PSS_F_09.119 IPEMA Surface Material Report - Least Favorable Impact Location (6 Locati | ons) - ASTM F1292 Rev. 1, Effective Date: 2020-7-21 Page 1 of 3 |

Project No.: 72186757-3b

Manufacturing Location ID: Dayton, TN

Test Date: 2/9/2023

| Drop | Specified Reference Temperature -4°C, (2) | | | | | Referer | nce Temperati | ure 23°C, (73° | F) | Reference Temperature 49°C, (120°F) | | | | |
|--------------------|---|---|----------------|-------------------------|-------------------------------------|--------------|--------------------------|--------------------------|---|---|---------------|-------------------------------|-------------------------------------|--|
| | Impact Height (Ft.) | 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 | 108 | 679 | 22.9 | 8.15 | | | | 0.00 | |
| 2 | 8 | | | | 0.00 | 114 | 682 | 22.9 | 8.15 | | | | 0.00 | |
| 3 | 8 | | | | 0.00 | 125 | 757 | 22.9 | 8.15 | | | | 0.00 | |
| Ave | rage | 0.0 | 0.0 | | | 119.5 | 719.5 | | | 0.0 | 0.0 | | | |
| leasured Surfa | ce Temperature | -4°C Max. Change from reference + 5°C, (5°F) | | | 23°C | Max. Cha | nge from refer (±5°F) | $ence + 3^{\circ}C$, | 49°C Max. Change from reference -3°C, (-5°F) | | | | | |
| Sample C | ondition: | | | RY | | | | RY | | | | RY | | |
| | entage (%) of max | vimum allow | | | C)• | G-Max: | 59.8% | HIC: | 72.0% | | | | | |
| 100 | entage (70) of ma | | inc values (g | -max and III | | | | • | urf/Seam | Pad | | | | |
| | | Refe | rence Tempera | ature -4°C, (2 | | | | ure 23°C, (73° | | | e Temperature | 49°C, (120°F | ²) | |
| Drop | Specified Impact Height (Ft.) | 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) | Theoretica Drop Heigh (ft.) | |
| 1 | 8 | | | | 0.00 | 113 | 659 | 22.8 | 8.08 | | | | 0.00 | |
| 2 | 8 | | | | 0.00 | 116 | 677 | 22.8 | 8.08 | | | | 0.00 | |
| 3 | 8 | | | | 0.00 | 127 | 749 | 22.8 | 8.08 | | | | 0.00 | |
| Ave | rage | 0.0 | 0.0 | | | 121.5 | 713.0 | | | 0.0 | 0.0 | | | |
| leasured Surfa | ce Temperature | -4°C | Max. Chai | nge from refer (5°F) | rence + 5°C, | 23°C | Max. Cha | nge from refer (±5°F) | ence $\pm 3^{\circ}$ C, | 49°C Max. Change from referen -3°C, (-5°F) | | | | |
| Sample C | Condition: | | D | RY | | | DRY | | | | DRY | | | |
| Perce | entage (%) of max | kimum allowa | able values (g | -max and HI | C): | G-Max: | 60.8% | HIC: | 71.3% | | | | | |
| | | | | | Im | pact Loc | ation: (| Center Ti | urf/Interse | ction Pa | h | | | |
| | Specified | Refe | rence Tempera | ature -4°C, (2 | | | | ure 23°C, (73° | | | | 49°C, (120°F | ²) | |
| | Impact Height (Ft.) | 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) | Theoretica Drop Heigh (ft.) | |
| Drop | | | | | 0.00 | 103 | 596 | 22.7 | 8.01 | | | | 0.00 | |
| Drop 1 | 8 | | | | | | 698 | 22.8 | 8.08 | | | | 0.00 | |
| | 8 | | | | 0.00 | 119 | 090 | | | | | | | |
| 1 | 1 | | | | 0.00 | 119 126 | 727 | 22.8 | 8.08 | | | İ | 0.00 | |
| 1 2 3 | 8 | 0.0 | 0.0 | | | | | | 8.08 | 0.0 | 0.0 | | 0.00 | |
| 1 2 3 Ave | 8 8 | 0.0 -4°C | | nge from refer (5°F) | 0.00 | 126 | 727 712.5 | | | 0.0 49°C | | Change from r -3°C, (-5°F | eference | |
| 1 2 3 Ave | 8 rage ce Temperature | | Max. Chai | | 0.00 | 126 122.5 | 727 712.5 Max. Cha | 22.8 nge from refer | | | Max. | Change from r -3°C, (-5°F) | eference | |

᠕᠊᠕

Project No.: 72186757-3b

Test Date: 2/9/2023

Manufacturing Location ID: Dayton, TN

| | | | | | Im | pact Loc | ation: | Seam Tu | rf/Center | Pad | | | | |
|-----------------|--|-------------|----------------|-------------------------|-------------------------------------|----------------------|------------------------------------|--------------------------|-------------------------------------|---|-------------------------------------|--------------------|-------------------------------------|--|
| | Specified | Refe | erence Temper | ature -4°C, (2 | | | | ure 23°C, (73° | | | Reference Temperature 49°C, (120°F) | | | |
| Drop | Impact Height (Ft.) | 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 | 106 | 657 | 22.7 | 8.01 | | | | 0.00 | |
| 2 | 8 | | | | 0.00 | 117 | 717 | 22.8 | 8.08 | | | | 0.00 | |
| 3 | 8 | | | | 0.00 | 121 | 758 | 22.8 | 8.08 | | | | 0.00 | |
| Aver | age | 0.0 | 0.0 | | | 119.0 | 737.5 | | | 0.0 | 0.0 | | | |
| Measured Surfac | ce Temperature | °C | Max. Cha | nge from refer (5°F) | rence + 5°C, | 23°C | Max. Cha | nge from refer (±5°F) | rence $\pm 3^{\circ}$ C, | °C Max. Change from reference -3°C, (-5°F) | | | | |
| Sample C | ondition: | | D | RY | | | [| RY | | | [| DRY | | |
| Perce | ntage (%) of ma | kimum allow | able values (g | -max and HI | C): | G-Max: | 59.5% | HIC: | 73.8% | | | | | |
| | | | | | | | | | rf/Seam F | | | | | |
| | Specified | Refe | rence Temper | ature -4°C, (2 | | Referen | nce Temperat | ure 23°C, (73° | , | Reference | e Temperatur | e 49°C, (120°I | | |
| Drop | Impact Height (Ft.) | 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 | 705 | 22.7 | 8.01 | | | | 0.00 | |
| 2 | 8 | | | | 0.00 | 130 | 796 | 22.7 | 8.01 | | | | 0.00 | |
| 3 | 8 | | | | 0.00 | 125 | 744 | 22.8 | 8.08 | | | | 0.00 | |
| Aver | age | 0.0 | 0.0 | | | 127.5 | 770.0 | | | 0.0 | 0.0 | | | |
| Measured Surfac | Measured Surface Temperature °C Max. Change from reference + 5°C, (5°F) | | | | | 23°C | Max. Cha | nge from refer (±5°F) | rence $\pm 3^{\circ}$ C, | °C Max. Change from reference -3°C, (-5°F) | | | | |
| Sample C | ondition: | | D | RY | | | C | RY | | | [| DRY | | |
| Perce | ntage (%) of ma | kimum allow | able values (g | -max and HI | C): | G-Max: | 63.8% | HIC: | 77.0% | 7.0% | | | | |
| | | | | | lm | pact Loc | ation: | Seam Tu | rf/Intersec | ction Pac | d | | | |
| | Specified | Refe | rence Temper | ature -4°C, (2 | 5°F) | Referen | Reference Temperature 23°C, (73°F) | | | | Reference Temperature 49°C, (120°F) | | | |
| Drop | Impact Height (Ft.) | 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 | 115 | 700 | 22.8 | 8.08 | 105 | 613 | 22.7 | 8.01 | 135 | 835 | 22.8 | 8.08 | |
| 2 | 8 | 120 | 738 | 22.8 | 8.08 | 123 | 773 | 22.8 | 8.08 | 116 | 716 | 22.7 | 8.01 | |
| 3 | 8 | 116 | 700 | 22.8 | 8.08 | 128 | 773 | 22.8 | 8.08 | 127 | 768 | 22.8 | 8.08 | |
| Aver | age | 118.0 | 719.0 | | | 125.5 | 773.0 | | | 116.0 | 742.0 | | | |
| Measured Surfac | ce Temperature | -4°C | Max. Cha | nge from refer (5°F) | rence + 5°C, | 23°C | Max. Cha | nge from refer (±5°F) | rence $\pm 3^{\circ}$ C, | 49°C | reference) | | | |
| Sample C | ondition: | | D | RY | | | | RY | | | E | DRY | | |
| Perce | ntage (%) of ma | kimum allow | able values (g | -max and HI | C): | G-Max: | 62.8% | HIC: | 77.3% | | | | | |
| | | | | | | TUN SUD Americ | a | | | | | | | |

᠕᠊᠕

America

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 Tencat | e Grass | TUV Report No.: 72186757-8a | | | | | | |
|--|-------------------------|--|--|--|--|--|--|--|
| Main Office Address: 1131 Broadway St. | | Report Date: 2/20/2023 | | | | | | |
| Dayton, TN 37321 | | Test Date: 2/20/2023 | | | | | | |
| Phone: <u>423.413.7028</u> Manufacturing Location ID:Dayton, TN | | Selection: Initial: Follow up Ref Job: | | | | | | |
| Commercial Name of product:Diamond Light (COC | 0064-66) | Sample Receipt Date: 1/27/2023 | | | | | | |
| Date of Manufacture: Unknown | ,0004-00) | Ambient Air Temperature: 22.3 °C | | | | | | |
| No. of samples submitted: See Comments | | Humidity: 24 % | | | | | | |
| | <u>T</u> (| est Equipment: | | | | | | |
| Alpha Automation, Triax, TUV System 5: | | Environmental Chamber No.:PLYP00069 | | | | | | |
| Alpha Automation, Triax, TUV System 7: | \checkmark | Calibration Due Date: 8/30/2023 | | | | | | |
| Accelerometer ID: F | PLYP00226 | Environmental Chamber No.: AE-029 | | | | | | |
| Accelerometer Calibration Date: 7 | 7/18/2022 | Calibration Due Date: 8/30/2023 | | | | | | |
| Loo | se Fill Ma | aterial Sample Description: | | | | | | |
| Engineered Wood Fiber: | | Un-compacted Depth: Inches | | | | | | |
| Loose Fill Wood: | | | | | | | | |
| Rubber Nuggets: | | | | | | | | |
| Rubber Buffings: | | | | | | | | |
| Sand: | | Compacted Depth: Inches | | | | | | |
| Gravel: | | | | | | | | |
| Other: | | | | | | | | |
| | Unitary | v Sample Description: | | | | | | |
| Tiles: | | Total Thickness: | | | | | | |
| Poured in Place: | | Top Layer: | | | | | | |
| Other: | | Base Layer: | | | | | | |
| r | urf Syst | em Sample Description: | | | | | | |
| – Turf: | \checkmark | Turf Pile Height: 1.8125 Inches | | | | | | |
| Pad: | $\overline{\checkmark}$ | Pad Thickness: 1.0 Inches | | | | | | |
| Aggregate: | \checkmark | Aggregate: 4.0 Inches | | | | | | |
| Infill: | \checkmark | Infill Amount: 2.0 Lbs./Sq. Ft. | | | | | | |
| Comments: | | Infill Type: envirofill | | | | | | |
| | | 5) 1.0 inch center pads, twenty seven (27) 1.0 inch seamed pads, twenty seven (27) 1.0 inch intersection pad, and 150lbs infill. sh) – over 1.0 inch Tiger Playground Pad – overlaying 4in. of compacted aggregate. Total system depth/thickness of 6.8125in. | | | | | | |
| The maximum critical fall height of the above described sample w | vas determii | <u>ned to be:</u> 5 Ft. | | | | | | |
| | | ed samples at the time of testing and at the temperature(s) reported. The results are specific sely match the described samples will perform differently. The following data sheet provides | | | | | | |
| ample in compliance with ASTM F1292-22 at the temperative statement of the second | ature and r | ating specified? Yes 🖌 No 🗌 | | | | | | |
| Signature: Patrick Ashley | | Title: Project Engineering Technician Date: 2/20/2023 | | | | | | |
| Signature: Patrick Ashley Reviewed by: <u>Timethy Foulia</u> | | Title: Project Engineering Technician Date: 2/22/2023 | | | | | | |

TUV Report No: 72186757-8a Participant: Polyloom dba Tencate Grass Manufacturing Location ID: Dayton, TN Test Date: 2/20/2023 Reference Temperature -4°C, (25°F) Reference Temperature 23°C, (73°F) Reference Temperature 49°C, (120°F) Critical Theoretical Theoretical Theoretical Drop Fall Height Velocity Velocity Velocity G-Max HIC Drop Height G-Max HIC Drop Height G-Max HIC Drop Height (Ft.) (ft/s) (ft/s) (ft/s) (ft.) (ft.) (ft.) 1 5 139 602 18.1 5.09 126 532 18.0 5.04 172 821 18.1 5.09 2 5 134 607 18.1 5.09 147 670 18.1 5.09 183 890 18.1 5.09 3 5 147 655 18.1 5.09 166 771 18.1 5.09 192 955 18.1 5.09 140.5 Average 631.0 156.5 720.5 187.5 922.5 Max. Change from reference + 3°C, Max. Change from reference + 5°C, Max. Change from reference -4°C 23°C 49°C Measured Surface Temperature (5°F) (5°F) -3°C, (-5°F) Dry Dry Dry Sample Condition: Reference Temperature -4°C, (25°F) Reference Temperature 23°C, (73°F) Reference Temperature 49°C, (120°F) One foot over Theoretical Theoretical Theoretical Drop Velocity Velocity Velocity (Ft.) G-Max HIC Drop Height G-Max HIC Drop Height G-Max HIC Drop Height (ft/s) (ft/s) (ft/s)(ft.) (ft.) (ft.) 6.09 1 172 208 232 6.09 6 877 19.8 1157 19.8 6.09 1362 19.8 2 200 6.09 6 6.09 982 6.09 243 1069 19.8 184 19.8 1469 19.8 6.09 3 209 6.09 234 1332 6 187 1050 19.8 6.09 1159 19.8 19.8 196.5 238.5 1400.5 193.5 1059.5 1070.5 Average Max. Change from reference + 5°C, Max. Change from reference + 3°C, Max. Change from reference Measured Surface Temperature -4°C 23°C 48°C (5°F) -3°C, (-5°F) (5°F) Dry Dry Dry Sample Condition: Reference Temperature -4°C, (25°F) Reference Temperature 23°C, (73°F) Reference Temperature 49°C, (120°F) One foot under Theoretical Theoretical Theoretical Drop Velocity Velocity Velocity (Ft.) HIC G-Max HIC HIC G-Max Drop Height Drop Height G-Max Drop Height (ft/s) (ft/s) (ft/s) (ft.) (ft.) (ft.) 4.03 327 16.2 4.08 101 1 83 282 16.1 96 337 16.1 4.03 4 2 4.08 4.08 469 16.2 4.08 4 98 355 16.2 122 448 16.2 125 3 4 104 378 16.2 4.08 131 492 16.2 4.08 144 555 16.2 4.08 Average 101.0 366.5 126.5 470.0 134.5 512.0 Max. Change from reference + 5°C, Max. Change from reference + 3°C, Max. Change from reference Measured Surface Temperature -3°C 23°C 49°C (5°F) -3°C, (-5°F) (5°F) Dry Dry Sample Condition: Dry



America



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

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

| Participant:Polyloom dba Tencate Grass Main Office Address: <u>1131 Broadway St.</u> <u>Dayton, TN 37321</u> Phone: <u>423.413.7028</u> Manufacturing Location ID: <u>Dayton, TN</u> Commercial Name of Product: <u>Diamond Light (C000064-66)</u> Date of Manufacture: <u>Unknown</u> No. of samples submitted: <u>See Comments</u> | Project No.:72186757-8b Report Date:2/20/2023 Test Date:2/20/2023 Selection: Initial Test: Follow up Test: Ref Job: Sample Receipt Date:1/27/2023 Ambient Air Temperature:22.3°C Humidity: 24 % |
|---|---|
| <u>Test E</u> | quipment: |
| 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 |
| Unitar <u>y Sample</u> | Layer Description: |
| Tiles: | Total Thickness: 6.8125in. |
| Poured in Place: | Top Layer: See Comments |
| Turf: 🗹 | Base Layer: See Comments |
| at the locations indicated on Pages 2 and 3. Impact Location: Least Favorable Impact Location was determined at: | Reference Temperature: 23°C |
| inch intersection pad, and 150lbs infill. | urf; fifty five (55) 1.0 inch center pads, twenty seven (27) 1.0 inch seamed pads, twenty seven (27) 1.0 size #12/20 mesh) – over 1.0 inch Tiger Playground Pad – overlaying 4in. of compacted aggregate. |
| | ples at the time of testing and at the temperature(s) reported. The results are specific atch the described samples will perform differently. The following data sheet provides |
| Sample in compliance with ASTM F1292-22 at the temperature and rating s | specified? Yes 🗹 No 🗌 |
| Patrick Ashley Signature: | ect Engineering Technician Date: 2/20/2023 |
| Reviewed by: <u>Simulting Fourlis</u> Title: Proj | ect Engineering Technician Date: 2/22/2023 |
| PSS_F_09.119 IPEMA Surface Material Report - Least Favorable Impact Location (6 Location) | ations) - ASTM F1292 Rev. 1, Effective Date: 2020-7-21 Page 1 of 3 |

Project No.: 72186757-8b

Manufacturing Location ID: Dayton, TN

Test Date: 2/20/2023

| | | | | | lm | pact Loc | ation: (| Center Tu | rf/Intersect | ion of Pa | d | | | |
|---|------------------------------------|--------------|---|-------------------------|-------------------------------------|--|---------------|--|-------------------------------------|---|---|--------------------|-------------------------------------|--|
| | Specified | Refe | rence Tempera | ature -4°C, (2 | 5°F) | Referer | ice Temperati | ure 23°C, (73° | F) | Reference | e Temperature | e 49°C, (120°F | F) | |
| Drop In | mpact Height (Ft.) | 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 | 139 | 602 | 18.1 | 5.09 | 126 | 532 | 18.0 | 5.04 | 172 | 821 | 18.1 | 5.09 | |
| 2 | 5 | 134 | 607 | 18.1 | 5.09 | 147 | 670 | 18.1 | 5.09 | 183 | 890 | 18.1 | 5.09 | |
| 3 | 5 | 147 | 655 | 18.1 | 5.09 | 166 | 771 | 18.1 | 5.09 | 192 | 955 | 18.1 | 5.09 | |
| Averag | je | 140.5 | 631.0 | | | 156.5 | 720.5 | | | 187.5 | 922.5 | | | |
| Measured Surface 7 | Temperature | -4°C | Max. Chai | nge from refer (5°F) | rence + 5°C, | 23°C Max. Change from reference \pm 3°C, (\pm 5°F) | | | rence $\pm 3^{\circ}$ C, | 49°C Max. Change from reference -3°C, (-5°F) | | | | |
| Sample Cond | dition: | | D | RY | | | D | RY | | | C | RY | | |
| | age (%) of max | timum allowa | able values (g | -max and HI | C): | G-Max: | 78.3% | HIC: | 72.1% | | | | | |
| | | | | | Im | pact Loc | ation: (| Center Ti | urf/Seam | Pad | | | | |
| | | Refe | rence Tempera | ature -4°C, (2 | | | | ure 23°C, (73° | | | e Temperature | e 49°C, (120°F | 5) | |
| Drop II | Specified mpact Height (Ft.) | 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 | 133 | 559 | 18.0 | 5.04 | | | | 0.00 | |
| 2 | 5 | | | | 0.00 | 150 | 679 | 18.0 | 5.04 | | | | 0.00 | |
| 3 | 5 | | | | 0.00 | 153 | 697 | 18.0 | 5.04 | | | | 0.00 | |
| Averag | je | 0.0 | 0.0 | | | 151.5 | 688.0 | | | 0.0 | 0.0 | | | |
| Measured Surface | Temperature | °C | °C Max. Change from reference + 5°C, (5°F) | | | | Max. Cha | Aax. Change from reference <u>+</u> 3°C, (±5°F) | | | °C Max. Change from reference -3°C, (-5°F) | | | |
| Sample Conc | Sample Condition: DRY | | | | | | D | RY | | DRY | | | | |
| Percenta | age (%) of max | timum allowa | able values (g | -max and HI | C): | G-Max: | 75.8% | HIC: | 68.8% | | | | | |
| | | | | | Im | pact Loc | ation: (| Center Ti | urf/Center | Pad | | | | |
| | Vegetted | Refe | rence Tempera | ature -4°C, (2 | | Reference Temperature 23°C, (73°F) | | | | Reference Temperature 49°C, (120°F) | | | | |
| Drop In | Specified mpact Height (Ft.) | 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 | 116 | 483 | 18.0 | 5.04 | | | | 0.00 | |
| 2 | 5 | | | | 0.00 | 140 | 635 | 18.0 | 5.04 | | | | 0.00 | |
| 3 | 5 | | | | 0.00 | 146 | 661 | 18.1 | 5.09 | | | | 0.00 | |
| Averag | je | 0.0 | 0.0 | | | 143.0 | 648.0 | | | 0.0 | 0.0 | | | |
| Measured Surface | Temperature | °C | Max. Char | nge from refer (5°F) | rence + 5°C, | 23°C | Max. Cha | nge from refer (±5°F) | $rence + 3^{\circ}C$, | °C | Max. Change from reference -3°C, (-5°F) | | | |
| Sample Conc | dition: | | D | RY | | | D | RY | | | C | RY | | |
| Percentage (%) of maximum allowable values (g-max and HIC): | | | | | G-Max: | 71.5% | HIC: | 64.8% | | | | | | |



Project No.: 72186757-8b

Test Date: 2/20/2023

Manufacturing Location ID: Dayton, TN

| | | | | | Im | pact Loc | ation: | Seam Tu | rf/Center | Pad | | | |
|----------------|--|-------------|----------------|------------------------|-------------------------------------|------------|--------------|---------------------------|-------------------------------------|---|--------------|--------------------|-------------------------------------|
| | Specified | Refe | erence Temper | ature -4°C, (2 | | | | ture 23°C, (73° | | | e Temperatur | e 49°C, (120°I | F) |
| Drop | Impact Height (Ft.) | 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 | 98 | 409 | 17.9 | 4.98 | | | | 0.00 |
| 2 | 5 | | | | 0.00 | 110 | 466 | 18.0 | 5.04 | | | | 0.00 |
| 3 | 5 | | | | 0.00 | 125 | 545 | 18.0 | 5.04 | | | | 0.00 |
| Ave | rage | 0.0 | 0.0 | | | 117.5 | 505.5 | | | 0.0 | 0.0 | | |
| Measured Surfa | ce Temperature | °C | Max. Cha | nge from refe (5°F) | rence + 5°C, | 23°C | Max. Cha | ange from refer (±5°F) | rence $\pm 3^{\circ}$ C, | °C Max. Change from reference -3°C, (-5°F) | | | |
| Sample C | Condition: | | D | RY | | | [| DRY | | | . [| DRY | |
| Perce | entage (%) of ma | ximum allow | able values (g | -max and HI | C): | G-Max: | 58.8% | HIC: | 50.6% | | | | |
| | | | | | Im | pact Loo | ation: | Seam Tu | rf/Seam F | Pad | | | |
| | Specified | Refe | rence Temper | ature -4°C, (2 | 5°F) | Refere | nce Temperat | ture 23°C, (73° | °F) | Reference | e Temperatur | e 49°C, (120°I | F) |
| Drop | Impact Height (Ft.) | 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 | 112 | 496 | 18.0 | 5.04 | | | | 0.00 |
| 2 | | | | | 0.00 | 131 | 593 | 18.0 | 5.04 | | | | 0.00 |
| 3 | 1 | | | | 0.00 | 142 | 640 | 18.0 | 5.04 | | | | 0.00 |
| Ave | rage | 0.0 | 0.0 | | | 136.5 | 616.5 | | | 0.0 | 0.0 | | |
| | Measured Surface Temperature °C Max. Change from reference + 5°C, (5°F) | | | | | 23°C | Max. Cha | ange from refer (±5°F) | rence $\pm 3^{\circ}$ C, | °C Max. Change from reference -3°C, (-5°F) | | | |
| Sample C | Condition: | | D | RY | | | [| DRY | | | [| DRY | |
| | entage (%) of ma | ximum allow | able values (g | -max and HI | (C): | G-Max: | 68.3% | HIC: | 61.7% | | | | |
| | | | | | lm | pact Loc | ation: | Seam Tu | rf/Intersed | ction Pac | k | | |
| | Specified | Refe | rence Temper | ature -4°C, (2 | 5°F) | Refere | nce Temperat | ture 23°C, (73° | Ϋ́F) | Reference Temperature 49°C, (120°F) | | | |
| Drop | Impact Height (Ft.) | 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 | 107 | 477 | 18.0 | 5.04 | | | | 0.00 |
| 2 | | | | | 0.00 | 129 | 588 | 18.0 | 5.04 | | | | 0.00 |
| 3 | | | | | 0.00 | 130 | 607 | 18.0 | 5.04 | | | | 0.00 |
| Ave | rage | 0.0 | 0.0 | | | 129.5 | 597.5 | | | 0.0 | 0.0 | | |
| Measured Surfa | ce Temperature | °C | Max. Cha | nge from refe (5°F) | rence + 5°C, | 23°C | Max. Cha | nge from refer (±5°F) | rence $\pm 3^{\circ}$ C, | °C Max. Change from reference -3°C, (-5°F) | | | |
| Sample C | Condition: | | D | RY | | | [| DRY | | | [| DRY | |
| Perce | entage (%) of ma | ximum allow | able values (g | -max and HI | C): | G-Max: | 64.8% | HIC: | 59.8% | | | | |
| | | | | | | TUN SUD | | | | | | | |

᠕᠊᠕