

TEST REPORT

No. 2625823/5 dated 17.07.2023

One-dna™ Play 24 | S70

Type of Testing: Determination of the Critical Fall Height (CFH) in accordance with DIN EN 1177:2018-03, the European standard for impact attenuating playground surfacing – Determination of critical fall height

Applicant: **LimeGreen Holding B.V.**
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Test Institute: **ISP GmbH**
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Order No.: 2625823

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By the Deutsche Akkreditierungsstelle (DAkkS) DIN EN ISO/IEC 17025:2018 accredited testing laboratory.

The accreditation covers only the test methods listed in the D-PL-20181-01-00 accreditation certificate.

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1. Sample Description

| | |
|-------------------------------------|--|
| System Name: | One-dna™ Play 24 S70 |
| System No.: | 2625823/S5 |
| Mineral infill: | 2625823/6 Silica sand (according to manufacturer; grain size: 0.3 – 1.0 mm) Sample amount: 100 kg |
| Top layer: | 2325823/1 Synthetic Turf: LimeGreen® Play 24 (according to manufacturer: made entirely of PE; pile length: 24 mm; stitch density: 19950 1/m²; single colour) Weight per unit area: 1432 g/m² Sample amount: 2 samples at approx. 1 m x 1 m |
| 1st Bottom layer: | 2325823/3 35 mm thick prefabricated shockpad: ProPlay-35 (according to manufacturer; made of thermal bonded (closed-celled cross-linked polyethylene foam with a fleece layer) Weight per unit area: 3351 g/m² Sample amount: 2 samples at approx. 1 m x 1 m |
| 2nd Bottom layer: | 2325823/3 35 mm thick prefabricated shockpad: ProPlay-35 (according to manufacturer; made of thermal bonded (closed-celled cross-linked polyethylene foam with a fleece layer) Weight per unit area: 3351 g/m² Sample amount: 2 samples at approx. 1 m x 1 m |
| Delivery date: | 29.06.2023 |
| Sampling: | No sampling by employees of ISP GmbH. Samples have been provided by the applicant. |
| Date of testing: | 29.06.2023 – 13.07.2023 |



Picture 1: One-dna™ Play 24 | S70 – side view
(Minor differences of the overall thickness near the peripheral area are possible)



Picture 2: One-dna™ Play 24 | S70 – View of the surface area

2. Test Procedure

The determination of Critical Fall Height (CFH) was carried out in accordance with DIN EN 1177:2018-03, method 1, for “impact attenuating playground surfacing – Determination of critical fall height” in the ISP GmbH laboratory.

The tested samples were conditioned at $23\pm 2^{\circ}\text{C}$ and $50\pm 5\%$ relative humidity.

The system was tested dry and laid loose on concrete floor.

All relevant test information e.g. technician, date of testing, conditioning period and test conditions were recorded and stored in the archive of the ISP GmbH.

The testing climate of 23/50-2 met the requirements of DIN EN ISO 291:2008-08.

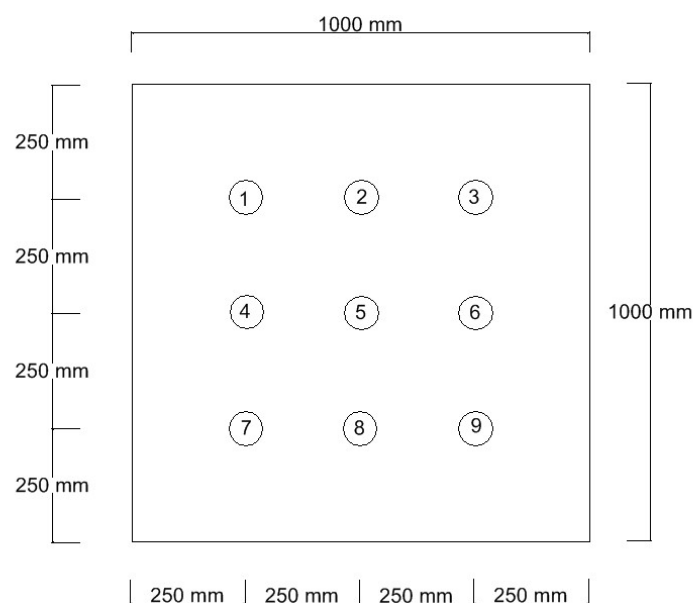
The following system has been tested

| | |
|---------------------------|------------------------------------|
| System name: | One-dna™ Play 24 S70 |
| 1 st Shockpad: | ProPlay-35 |
| 2 nd Shockpad: | ProPlay-35 |
| Synthetic turf: | LimeGreen® Play 24 |
| Mineral infill: | Silica sand – 25 kg/m ² |
| ISP system no.: | 2625823/S5 |

3. Arrangement of the measuring points

The system points were chosen systematically in accordance with DIN EN 1177:2018-03.

The system points had a minimum distance of 25 cm to each other and the edge of the sample.



Graphic 1: View of the system points

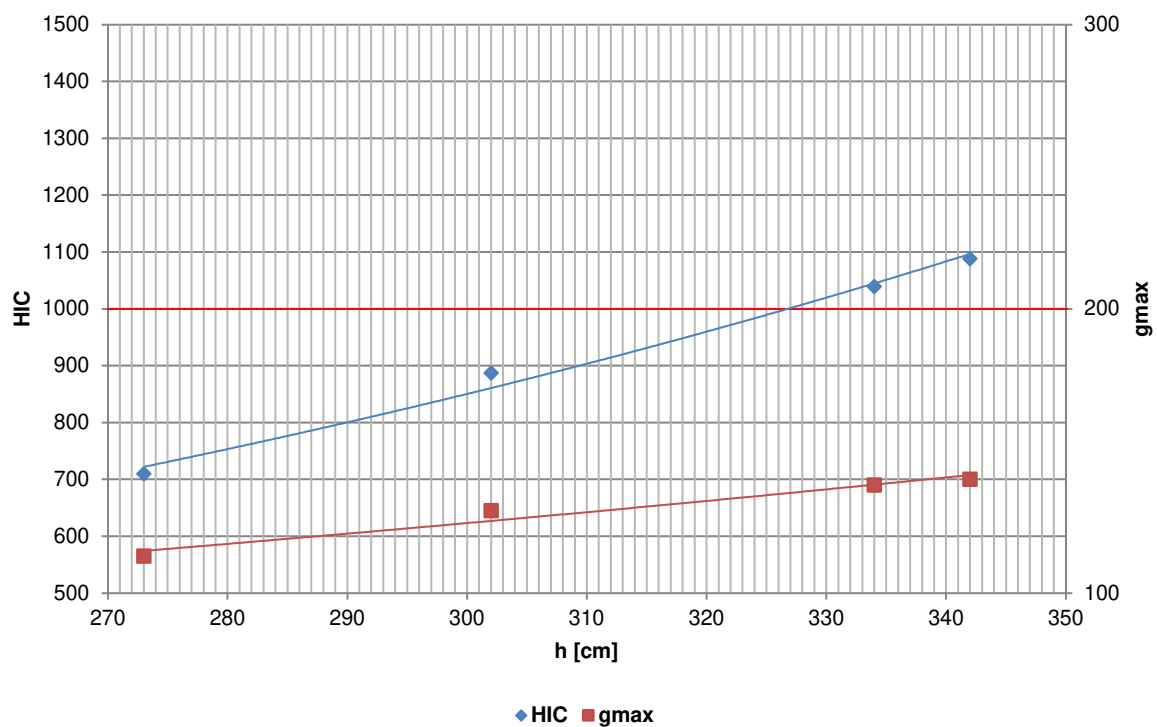
4. Test Results

4.1. Determination of the Critical Fall Height (CFH)

| System Point | 1. Fall height | | | 2. Fall height | | | 3. Fall height | | | 4. Fall height | | | CFH [m] |
|--------------|-----------------------------|-----|------------------|----------------|-----|------------------|----------------|------|------------------|----------------|------|------------------|---------|
| | h [cm] | HIC | g _{max} | h [cm] | HIC | g _{max} | h [cm] | HIC | g _{max} | h [cm] | HIC | g _{max} | |
| 1 | 261 | 659 | 108 | 310 | 868 | 125 | 339 | 1014 | 138 | 347 | 1042 | 140 | 3.38 |
| 2 | 273 | 727 | 113 | 301 | 819 | 120 | 342 | 1038 | 139 | 346 | 1101 | 144 | 3.33 |
| 3 | 273 | 710 | 113 | 302 | 887 | 129 | 334 | 1039 | 138 | 342 | 1088 | 140 | 3.27 |
| 4 | 273 | 693 | 110 | 301 | 888 | 129 | 334 | 1028 | 136 | 340 | 1086 | 146 | 3.27 |
| 5 | 273 | 703 | 112 | 301 | 852 | 127 | 340 | 1031 | 135 | 344 | 1043 | 136 | 3.34 |
| 6 | 273 | 693 | 110 | 301 | 827 | 123 | 342 | 1039 | 139 | 346 | 1053 | 139 | 3.35 |
| 7 | 273 | 717 | 113 | 302 | 819 | 122 | 336 | 1019 | 135 | 342 | 1045 | 140 | 3.34 |
| 8 | 273 | 703 | 113 | 302 | 832 | 123 | 339 | 1029 | 140 | 342 | 1051 | 141 | 3.33 |
| 9 | 274 | 769 | 118 | 302 | 834 | 123 | 340 | 1029 | 137 | 347 | 1061 | 142 | 3.34 |
| System | Critical Fall Height (CFH): | | | | | | | | | | | | 3.27 |

4.2. Graphical Analysis

4.2.1. Determination of Critical Fall Height (CFH) on System Point 3



4.2.2. Time- / Acceleration curve of an impact, 3rd fall height on system point 5



4.3. Overall Result

According to the DIN EN 1177:2018-03 Critical Fall Height (CFH) is the lower value of the drop heights at a HIC value of 1000 or a g_{\max} value of 200 g.

| | |
|---|-------------------------------|
| System name: | One-dna™ Play 24 S70 |
| System number: | 2625823/S5 |
| Critical Fall Height (CFH): | 3.27 m ^a |
| <small>a According to DIN EN 1177:2018-03 a measurement uncertainty of $\pm 7\%$ must be attributed.</small> | |

END OF THE TEST REPORT

The test results were specified and evaluated without considering the measurement uncertainty.

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The test results relate only to the tested samples in the condition as they were received.

This test report was created and released digitally. Effectiveness and validity are equivalent to digital and analogue reports.

Münster, 17.07.2023



Paul Dück
TECHNICAL DIRECTOR

