

# ***TEST REPORT***

## **24-0585IT**

Issued on December 04<sup>th</sup> 2024

CLIENT

**KATASKEVES DAPEDON LTD**

PRODUCT NAME

**POLYFLEX PU-IN**

CATEGORY

**INDOOR SPORT FLOORING**

**Preliminary laboratory tests in accordance with:**

**EN 14904:2006 Surfaces for sports areas - Indoor surfaces for multi-sports use - Specification**

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## **PREMISE**

The laboratory Labosport Italia Srl is accredited by ACCREDIA with accreditation number 1427 L.

ACCREDIA is, for Italy, the body that verifies the technical and organizational competence of the laboratories in carrying out the tests and / or the calibrations. The accreditation is granted on compliance with the requirements established by the UNI CEI EN ISO / IEC 17025 and ACCREDIA requirements.

The accreditation is relative to the tests for which the Laboratory has requested and obtained accreditation and for this it ensures both the technical competence and the impartiality of the personnel and the adequacy of the equipment and the structure.

These skills are periodically verified through sample checks on the accredited tests and on the quality management system.

ACCREDIA guarantees that the laboratory is able to perform the tests subject to accreditation in accordance with the relevant standards or test methods but cannot be held responsible for the results of the tests themselves.

ACCREDIA accreditation is granted only for the testing and / or calibration activities carried out by the Laboratory. It therefore does not include other activities such as advice and / or the expression of opinions or opinions based on the results of the tests and cannot be used for product certification.

The complete list of laboratory tests accredited by ACCREDIA is available on request at the Laboratory or at the following address: <http://www.accredia.it>

## **TEST LIST AND TESTING CONDITIONS**

### **EN 14808:2005, UNI EN 14808:2006 – Surfaes for sports areas – Shock absorption capacity**

Test carried out at a temperature of  $23\text{ °C} \pm 2\text{ °C}$ .

Sample conditioned for a period of 40 hours at  $23\text{ °C} \pm 2\text{ °C}$ .

### **EN 14809:2005, UNI EN 14809:2006 - Surfaes for sports areas – Vertical deformation**

Test carried out at a temperature of  $23\text{ °C} \pm 2\text{ °C}$ .

Sample conditioned for a period of 40 hours at  $23\text{ °C} \pm 2\text{ °C}$ .

### **\* EN 13036-4:2011 - Road and airfield surface characteristics - Test methods - Part 4: Method for measurement of slip/skid resistance of a surface: The pendulum test**

Test carried out at a temperature of  $20\text{ °C} \pm 2\text{ °C}$ .

Sample conditioned for a period of 2 ore a  $20\text{ °C} \pm 2\text{ °C}$ .

### **EN 1969:2000 - Surfaces for sports areas - Thickness– Method A**

Conditioning of the sample for a minimum of 3 h at  $23\text{ °C} \pm 2\text{ °C}$ .

Test performed at a temperature of  $23\text{ °C} \pm 2\text{ °C}$  and a relative humidity of  $50\% \pm 5\%$ .

### **ISO 8543:2020 - solo Clause 6 – 7 - Textile floor coverings – Mass per unit area**

Conditioning of the sample for a minimum of 16 h at  $23\text{ °C} \pm 2\text{ °C}$  and a relative humidity of  $50\% \pm 5\%$ .

Test performed at a temperature of  $23\text{ °C} \pm 2\text{ °C}$  and a relative humidity of  $50\% \pm 5\%$ .

\* Test not subject to Accredia accreditation

## **EXPANDED UNCERTAINTY OF THE TEST METHODS**

### **EN 14808:2005, UNI EN 14808:2006 – Surfaes for sports areas – Shock absorption capacity**

The expanded uncertainty is calculated as 3 %.

### **EN 14809:2005, UNI EN 14809:2006 - Surfaes for sports areas – Vertical deformation**

The expanded uncertainty is calculated as 0,3 mm.

### **EN 1969:2000 - Surfaces for sports areas - Thickness– Method A**

The expanded uncertainty is estimated at 0,1 mm.

### **ISO 8543:2020 - solo Clause 6 – 7 - Textile floor coverings – Mass per unit area**

The expanded uncertainty is estimated at 19 g/m<sup>2</sup>.

The expanded uncertainty is calculated with a coverage factor (k) equal to 2, corresponding to a 95 % confidence level.

## DECISIONAL CRITERIA

For all tests in this report, judgments (where present) are made by defining the data as compliant when the result, not considering the contribution of uncertainty, falls within the defined limits.

The level of risk of false acceptance associated with the defined criterion can be up to 50 % in the expression of the test result.

## IMPORTANT INFORMATION

Reproduction of this test report is authorized only in its complete form.

The results are intended to apply only to the specimen tested.

The specimens on which the tests were performed are extracted from the sample as received.

The laboratory disclaims any responsibility regarding all information provided by the customer.

## SUBJECT

Determination of some parameters of the EN 14904:2006 listed in the section "Test list and testing conditions".

## REFERENCE DOCUMENTS

EN 14904:2006 - Surfaces for sports areas - Indoor surfaces for multi-sports use - Specification

EN 14808:2005, UNI EN 14808:2006 – Surfaes for sports areas – Shock absorption capacity

EN 14809:2005, UNI EN 14809:2006 - Surfaes for sports areas – Vertical deformation

EN 13036-4:2011 - Road and airfield surface characteristics - Test methods - Part 4: Method for measurement of slip/skid resistance of a surface: The pendulum test

EN 1969:2000 - Surfaces for sports areas - Determination of thickness of synthetic sports surfaces

ISO 8543:2020 - Textile floor coverings - Methods for determination of mass

## STORAGE TIMES

Documents are stored for 4 years and samples 1 month from the issue of the Test report.

## SAMPLING

The sampling is carried out by the customer.

## LOCATION OF PERFORMANCE OF THE TESTS

The tests are carried out at Labosport Italia Srl premises.

## APPLICANT

|         |                                       |
|---------|---------------------------------------|
| Company | <b>KATASKEVES DAPEDON LTD</b>         |
| Address | 5 Koromila Str.<br>54645 Thessaloniki |

|         |        |
|---------|--------|
| Country | Greece |
|---------|--------|

## ACQUISITION DATA

|                          |                                 |
|--------------------------|---------------------------------|
| Order received on        | July 25 <sup>th</sup> 2024      |
| First sample received on | September 13 <sup>th</sup> 2024 |
| Last sample received on  | September 13 <sup>th</sup> 2024 |
| Beginning of tests       | November 27 <sup>th</sup> 2024  |
| Ending of tests          | December 02 <sup>nd</sup> 2024  |

## PRODUCT IDENTIFICATION (DATA SUPPLIED BY THE CUSTOMER)

Informations about the product.

Indoor highly resilient sports flooring system ideal for multipurpose halls, gym floors, tennis, basketball, volleyball, handball, futsal courts, as well as any other indoor sports court. Combination of prefabricated shock-pads and polyurethane coatings in 6mm up to 16mm average total thickness.

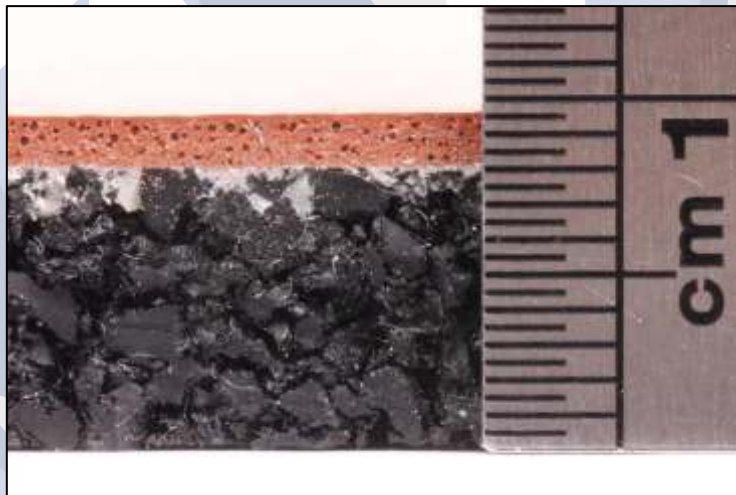
## PRODUCT IDENTIFICATION (VALUES DETERMINED BY THE LABORATORY)



Upper side image



Lower side image



Cross section image

| Notes |
|-------|
| None. |

## TEST RESULTS

### EN 14808:2005, UNI EN 14808:2006 – Surfaces for sports areas – Shock absorption capacity

The sample has a dimension of 1,0 m x 1,0 m and it was tested on a concrete surface on which was freely laid without to be fixed in any way. The sample is dry.

The tests were performed at a temperature of 22,6 °C and at a humidity of 48,2 %.

Reference force on concrete 6479 N recorded on November 26<sup>th</sup> 2024.

The test was performed on December 02<sup>nd</sup> 2024.

| Property         |           | Tests locations |      |      |      |                 |     |                    |     | Mean |
|------------------|-----------|-----------------|------|------|------|-----------------|-----|--------------------|-----|------|
|                  |           | 1               | 2    | 3    | 4    | 5               | 6   | 7                  | 8   |      |
| Shock absorption | Result    | 25 %            | 25 % | 25 % | 25 % | - %             | - % | - %                | - % | 25 % |
|                  | Variation | 0 %             | 0 %  | 0 %  | 0 %  | - %             | - % | - %                | - % | -    |
| Requirement      |           |                 |      |      |      | Wooden surfaces |     | Synthetic surfaces |     |      |
|                  |           | Result          |      |      |      | 25-75 %         |     | 25-75 %            |     |      |
|                  |           | Variation       |      |      |      | ±5 %            |     | ±5 %               |     |      |
| Test result      |           |                 |      |      | Pass |                 |     |                    |     |      |

| Notes |
|-------|
| None. |

### EN 14809:2005, UNI EN 14809:2006 - Superfici per aree sportive – Deformazione verticale

The sample has a dimension of 1,0 m x 1,0 m and it was tested on a concrete surface on which was freely laid without to be fixed in any way. The sample is dry.

The tests were performed at a temperature of 22,7 °C and at a humidity of 48,3 %.

The test was performed on December 02<sup>nd</sup> 2024.

| Property             | Tests locations |        |        |        |                 |      |      |                    | Mean   |
|----------------------|-----------------|--------|--------|--------|-----------------|------|------|--------------------|--------|
|                      | 1               | 2      | 3      | 4      | 5               | 6    | 7    | 8                  |        |
| Vertical deformation | 1,0 mm          | 1,0 mm | 0,9 mm | 1,0 mm | - mm            | - mm | - mm | - mm               | 1,0 mm |
| Requirement          |                 |        |        |        | Wooden surfaces |      |      | Synthetic surfaces |        |
|                      |                 |        |        |        | ≤5,0 mm         |      |      | ≤5,0 mm            |        |
| Test result          |                 |        |        |        | Pass            |      |      |                    |        |

| Notes |
|-------|
| None. |

### EN 13036-4:2011 - Road and airfield surface characteristics - Test methods - Part 4: Method for measurement of slip/skid resistance of a surface: The pendulum test

The sample has a dimensions of 1000 mm x 1000 mm and it was tested on a concrete surface on which was freely laid and fixed with double-sided tape. The sample is flat and dry. The test foot used for the tests is the wide foot type 57 with reference number CEN #57.

The tests were performed by Matteo Massironi on December 02<sup>nd</sup> 2024 at 11:00.

| Property    |           | Test locations |    |    |    |    | Mean | Wooden surfaces requirement | Synthetic surfaces requirement |
|-------------|-----------|----------------|----|----|----|----|------|-----------------------------|--------------------------------|
|             |           | 1              | 2  | 3  | 4  | 5  |      |                             |                                |
| Friction    | Dir. 0°   | 85             | 80 | 80 | 80 | 80 | 81   | 80-110                      | 80-110                         |
|             | Variation | 4              | 1  | 1  | 1  | 1  | -    | ± 4                         | ± 4                            |
|             | Dir. 90°  | 85             | 85 | 80 | 85 | 80 | 83   | 80-110                      | 80-110                         |
|             | Variation | 2              | 2  | 3  | 2  | 3  | -    | ± 4                         | ± 4                            |
| Test result |           |                |    |    |    |    |      | Pass                        |                                |

| Notes |
|-------|
| None. |

### EN 1969:2000 - Surfaces for sports areas - Thickness- Method A

Tests have been carried out at a temperature of 22,5 °C and at a relative humidity of 48,0 %.

Test has been carried out on December 02<sup>nd</sup> 2024.

| Sample 1 | Sample 2 | Sample 3 | Sample 4 | Sample 5 | Mean   |
|----------|----------|----------|----------|----------|--------|
| 9,90 mm  | 9,80 mm  | 9,80 mm  | 9,90 mm  | 9,80 mm  | 9,8 mm |

| Note  |
|-------|
| None. |

### ISO 8543:2020 - solo Clause 6 – 7 - Textile floor coverings – Mass per unit area

Tests have been carried out at a temperature of 22,5 °C and at a relative humidity of 48,2 %.

Test has been carried out on December 02<sup>nd</sup> 2024.

| Sample 1              | Sample 2              | Sample 3              | Sample 4              | Mean                  | CV Coefficient of variation |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------------|
| 8395 g/m <sup>2</sup> | 8374 g/m <sup>2</sup> | 8419 g/m <sup>2</sup> | 8403 g/m <sup>2</sup> | 8398 g/m <sup>2</sup> | 0,2 %                       |

| Note  |
|-------|
| None. |

## EQUIPMENT USED

### EN 14808:2005, UNI EN 14808:2006 – Surfaces for sports areas – Shock absorption capacity

| Device               | Manufacturer            | Model  | Technical sheet |
|----------------------|-------------------------|--------|-----------------|
| Artificial athlete   | Labosport International | NA     | STR333 - BIANCO |
| Electronic interface | Labosport International | NA     | STR341 - BIANCO |
| Datalogger           | Testo                   | 177-H1 | STR018          |

### EN 14809:2005, UNI EN 14809:2006 - Superfici per aree sportive – Deformazione verticale

| Device               | Manufacturer            | Model  | Technical sheet |
|----------------------|-------------------------|--------|-----------------|
| Artificial athlete   | Labosport International | NA     | STR333 - BIANCO |
| Electronic interface | Labosport International | NA     | STR341 - BIANCO |
| Datalogger           | Testo                   | 177-H1 | STR018          |

### EN 13036-4:2011 - Road and airfield surface characteristics - Test methods - Part 4: Method for measurement of slip/skid resistance of a surface: The pendulum test

| Device     | Manufacturer | Model  | Technical sheet |
|------------|--------------|--------|-----------------|
| Pendulum   | All Test UK  | NA     | STR006          |
| Datalogger | Testo        | 177-H1 | STR018          |

### EN 1969:2000 - Surfaces for sports areas - Thickness– Method A

| Equipment  | Manufacturer | Model         | Technical sheet |
|------------|--------------|---------------|-----------------|
| Micrometer | Mitutoyo     | ID-H0530/0560 | STR300          |
| Datalogger | Testo        | 177-H1        | STR018          |

### ISO 8543:2020 - solo Clause 6 – 7 - Textile floor coverings – Mass per unit area

| Equipment    | Manufacturer | Model             | Technical sheet |
|--------------|--------------|-------------------|-----------------|
| Balance      | Radwag       | PS6000/C/1        | STR043          |
| Tape measure | Stanley      | Powerlock Classic | STR229          |
| Datalogger   | Testo        | 177-H1            | STR018          |

## ADDITIONS, DIFFERENCES OR EXCLUSIONS FROM THE TEST METHOD

None.

## COMMENTS ON THE TESTS

None.

## ADDITIONAL INFORMATION

None.

## CONCLUSION

The sample of the product named **POLYFLEX PU-IN**

provided by the company **KATASKEVES DAPEDON LTD**, tested in accordance with the standard "EN 14904:2006 - Surfaces for sports areas - Multi-sport surfaces for indoor use - Specifications", complies with the requirements of the same with respect to the following points:

- Shock absorption
- Vertical deformation
- Friction

Laboratory Director  
Roberto Armeni



----- End of the Test Report -----