TEST REPORT

20-0688IT

Issued on April 08th 2021

CLIENT

CASALI SPA

PRODUCT NAME

PAVISINT SL 75 5+2

TYPE

SPORT SURFACE

Test in accordance with:

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

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Results are valid only for the sample tested

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PREMISE

The laboratory Labosport Italia Srl is accredited by ACCREDIA with accreditation number 1427.
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, declarations of conformity 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

EXPANDED UNCERTAINTY

SHOCK ABSORPTION - EN14808:2005

The expanded uncertainty is estimated as 3%.
The expanded uncertainty is calculated with a coverage factor (k) equal to 2, corresponding to a 95% confidence level.

VERTICAL DEFORMATION - EN14809:2005

The expanded uncertainty is estimated as 0,3mm.
The expanded uncertainty is calculated with a coverage factor (k) equal to 2, corresponding to a 95% confidence level.

VERTICAL BALL BEHAVIOUR – EN12235:2013 (BASKETBALL)

The expanded uncertainty is estimated as 0,02m.
The expanded uncertainty is calculated with a coverage factor (k) equal to 2, corresponding to a 95% confidence level.

SUBJECT

Determination of several values related to the test methods listed in the EN 1904:2006 standard and detailed in "Reference documents" paragraph.

REFERENCE DOCUMENTS

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

* EN 14808:2005 Surfaces for sports areas – Determination of shock absorption

* EN 14809:2005 Surfaces for sports areas - Determination of vertical deformation

* EN 12235:2013 Surfaces for sports areas - Determination of vertical ball behaviour

EN ISO 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 ISO 5470-1:2016 Rubber- or plastics-coated fabrics - Determination of abrasion resistance - Part 1: Taber abrader

EN 1517:2020 Surfaces for sports areas - Determination of resistance to impact

EN 1516:1999 Surfaces for sports areas - Determination of resistance to indentation

EN ISO 2813:2014 Paints and varnishes - Determination of gloss value at 20°, 60° and 85°

EN 1569:2020 Surfaces for sports areas - Determination of the behaviour under a rolling load

The tests included in the accreditation scope are high lined with an asterisk *

STORAGE TIMES

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

TESTING CONDITIONS

Tests stating a specific temperature and/or humidity are performed in accordance with the requirements of the relevant test method and the values are detected during the tests and reported in this document in the section relating to the test itself.
For all tests for which no specific environmental conditions are foreseen in the test method, these must be carried out at a temperature between 10°C and 35°C.

SAMPLING

The sampling is carried out by the customer.

LOCATION OF PERFORMANCE OF THE TESTS

The tests are carried out at Labosport premises.

APPLICANT

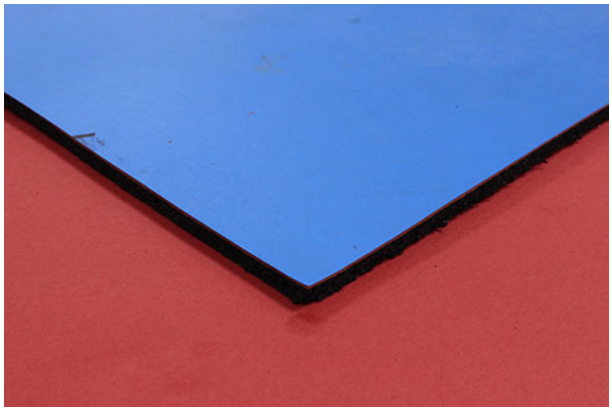
Company	CASALI SPA
Address	Zona Industriale C.I.A.F. 60015 Castelferretti (AN)
Country	Italy

ACQUISITION DATA

Order received on	September 30th 2020
First sample received on	October 21st 2020
Last sample received on	December 02nd 2020
Starting date of the tests	November 02nd 2020
Ending date of the tests	March 25th 2021

PRODUCT IDENTIFICATION (VALUES DETERMINED BY THE LABORATORY)

Total weight: 4,7kg/m^2



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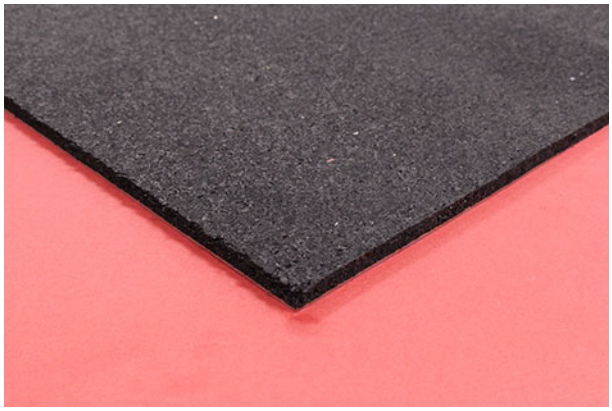

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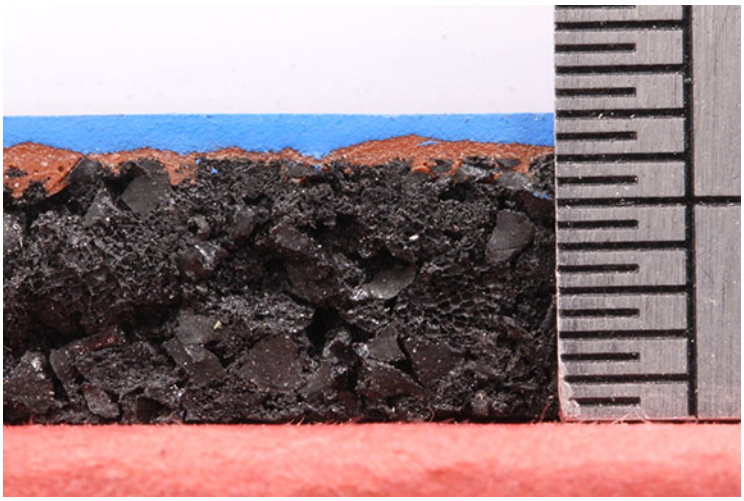

Cross section image

PRODUCT IDENTIFICATION (DATA SUPPLIED BY THE CUSTOMER)

Product name: Pavisint SL 75 5+2
Type: Point-elastic sports floor.
Total weight: 5,3kg/m^2
Description of product construction:
The system is composed as follows (starting from the lowest layer):
- Prefabricated rubber mat (Sportmat), height 5 mm, surface density 2,8 Kg/m^2, black color.
- Hole filler PU (Pavisint Sealer 45), surface density 0,3 Kg/m^2.
- Performance self-leveling PU coating (Pavisint SL 75), height 2 mm, surface density 2,0 Kg/m^2
- PU paint (Pavisint Finish 90), surface density 0,2 Kg/m^2.

TESTS LOCATIONS

The following test positions are referred to the Shock absorption test EN 14808:2005, Vertical deformation EN14809:2005 and Vertical ball behaviour EN12235:2013.

1. Solid
2. Solid
3. Solid
4. Solid
5. Solid
6.
7.
8.

TESTS RESULTS

SHOCK ABSORPTION - EN14808:2005

The sample was conditioned for 40 hours at the temperature of 23°C ±2°C before to be tested, dimensions are 3,5m x 3,5m 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 22,5°C and at a humidity of 49,1%.

Reference force on concrete 6520N recorded on September 20th 2020.

The test was performed on December 07th 2020.

Property		Tests locations								Mean
		1	2	3	4	5	6	7	8	
Shock absorption	Result	25%	25%	25%	25%	25%	%	%	%	25%
	Variation	0%	0%	0%	0%	0%	%	%	%	-

Requirement		Wooden surfaces	Synthetic surfaces
	Result	25-75%	25-75%
	Variation	±5%	±5%
Test result		Pass	

Notes
None.

VERTICAL DEFORMATION - EN14809:2005

The sample was conditioned for 40 hours at the temperature of 23°C ±2°C before to be tested, dimensions are 3,5m x 3,5m 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 22,5°C and at a humidity of 49,1%.

The test was performed on December 07th 2020.

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

Notes
None.

VERTICAL BALL BEHAVIOUR - EN12235:2013 (BASKETBALL)

The sample was conditioned for at least 88 hours at a temperature of 23°C ±2°C and at a relative humidity of 50% ±5% before to be tested, dimensions are 3,5m x 3,5m 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 ball used for the tests was a basketball cathegory 7 MOLTEN GG7X (FIBA approved). The fall height of the ball was 1,80m.
The tests were performed at a temperature of 22,1°C and at a humidity of 48,4%.

The test was performed on March 19th 2021.

Property		Tests locations								Mean
		1	2	3	4	5	6	7	8	
Vertical ball behaviour	Result	1,01m	1,02m	1,03m	1,03m	m	m	m	m	1,02m
		95%	97%	98%	97%	%	%	%	%	97%
	Variation	2%	0%	1%	1%	%	%	%	%	-
Requirement						Wooden surfaces		Synthetic surfaces		
		Risult				≥90%		≥90%		
		Variation				±3%		±3%		
Test result						Pass				

Notes
None.

FRICTION – EN13036-4:2011

The sample was conditioned for 30 minutes at the temperature of 23°C ±2°C before to be tested, dimensions are 1500mm x 1500mm 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 from Matteo Giorgini on March 22nd 2021 at 11:50.

Property		Test locations					Mean	Wooden surfaces requirement	Synthetic surfaces requirement
		1	2	3	4	5			
Friction	Dir. 0°	105	110	105	105	110	107	80-110	80-110
	Variation	2	3	2	2	3	-	±4	±4
	Dir. 90°	105	105	110	110	105	107	80-110	80-110
	Variation	2	2	3	3	2	-	±4	±4
Test result								Pass	

Notes
None.

ABRASION RESISTANCE - EN ISO 5470-1:2016

The samples were conditioned at a temperature of 23°C ±2°C and a relative humidity of 50% ±5% in accordance with the ISO 2231:1989 standard before to be tested, dimensions are 114,00mm ±1mm diameter with a hole in the center of 6,35mm diameter and they were carefully laid on the circular rotating platform fixing them with double-sided tape.

The load applied to each wheel during the test was 750g.

The number of cycles was 1000 at a rotational speed of 60 turn/minutes at a frequency of 50Hz.

The abrasive wheels used for the test were H-18 for synthetic surfaces.

The tests were performed at a temperature of 21,1°C and at a relative humidity of 47,3%.

The average mass loss was 10,9mg/100cycles.

The test was performed on March 22nd 2021.

Property	Samples						Mean	Wooden surfaces requirement	Synthetic surfaces requirement
	1	2	3	4	5	6			
Abrasion resistance	122mg	103mg	95mg	137mg	98mg	101mg	109mg	80mg	1000mg
Test result								Pass	

Notes
None

IMPACT RESISTANCE - EN 1517:2020

The sample was conditioned for 14 days at a temperature of 50°C ±1°, dimensions are 500mm x 500mm and it was tested on a concrete surface on which has been assembled in accordance with manufacturer's instructions.

The test missile has a mass of 800g.

The tests were performed at a temperature of 10°C ±1°C.

Property		Test locations In the center of the sample	Wooden surfaces requirement	Synthetic surfaces requirement
Resistance to impact	Permanent indentation	0mm	≤0,5mm	0mm
	Surface aspect	No cracking, splitting, delamination or permanent indentation.	No cracking, splitting, delamination or permanent indentation.	No cracking, splitting, delamination or permanent indentation.
Test result			Pass	

Notes
None.

RESISTANCE TO INDENTATION - EN 1516:1999

The samples were conditioned for at least 88 hours at a temperature of 23°C ±2°C and at a relative humidity of 50% ±5% before to be tested, dimensions are 500mm x 500mm and they were tested on a concrete surface on which has been assembled in accordance with manufacturer's instructions.

The tests were performed at a temperature of 22,8°C.

The test was performed on March 22nd 2021.

Property		Samples			Mean	Wooden surfaces requirement	Synthetic surfaces requirement
		1	2	3			
Resistance to indentation	Indentation after 5 min.	0,5mm	0,5mm	0,5mm	0,5mm	-	-
	Indentation after 24 hours	0,2mm	0,2mm	0,2mm	0,2mm	≤0,5mm	≤0,5mm
Test result						Pass	

Notes
None.

SPECULAR GLOSS - EN ISO 2813:2014

The samples were conditioned for at least 16 hours at a temperature of 23°C ±2°C and at a relative humidity of 50% ±5% before to be tested, dimensions are 1500mm x 1500mm. The sample was flat.

The instrument for detecting the specular gloss at an angle of incidence of 85° is a gloss meter Elcometer 480.

The test was performed on March 22nd 2021.

Property	Tests locations								Mean
	1	2	3	4	5	6	7	8	
Specular gloss at 85°	26,3GU	20,8GU	23,6GU	22,5GU	21,9GU	GU	GU	GU	23GU
	26%	21%	24%	23%	22%	%	%	%	23%
Requirement					Wooden surfaces		Synthetic surfaces		
					≤45%		≤30%		
Test result					Pass				

Notes
None.

ROLLING LOAD - EN 1569:2020

The samples were conditioned for at least 3 hours at a temperature of 23°C ±2°C and at a relative humidity of 50% ±5% before to be tested, dimensions are 1500mm x 1500mm. The sample has been assembled in accordance with manufacturer's instructions.

The tests were performed at a temperature of 22,4°C and at a relative humidity of 48,5%.

The test was performed on February 10th 2021.

Property		Tests locations		Wooden surfaces requirement	Synthetic surfaces requirement
		Direzione 0°	Direzione 90°		
Rolling load	Permanent indentation	0,3mm	0,3mm	≤0,5mm	≤0,5mm
	Surface aspect	No perceivable damage	No perceivable damage	No perceivable damage	No perceivable damage
Risultato della prova				Pass	

Notes
None.

INSTRUMENTS USED

EN14808:2005 – SHOCK ABSORPTION

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

EN14809:2005 – DEFORMAZIONE VERTICALE

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

EN12235:2013 – COMPORTAMENTO VERTICALE DELLA PALLA

Instruments	Manufacturer	Model	Technical sheet
Ball bounce metal frame	Hilec	PID-240	STR322
Flexmeter	Tajima	Hilock-25	STR229
Datalogger	Testo	177-H1	STR018

EN ISO 13036-4:2011 – RESISTENZA ALLO SLITTAMENTO

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

EN ISO 5470-1:2016 – ABRASIONE TABER

Instruments	Manufacturer	Model	Technical sheet
Taber	Taber	5135 Abraser	STR093
Balance	RAD-WAG	PS1000C/1	STR082
Datalogger	Testo	177-H1	STR018

EN 1517:2020 – RESISTENZA ALL'IMPATTO

Instruments	Manufacturer	Model	Technical sheet
Impact metal frame	Labosport International	NA	STR361
Impact missile 10mm	Labosport International	NA	STR362
Timer	RS	328-011	STR077
Depth caliper	Mitutoyo	Absolute VDS15AX	STR307
Datalogger	Testo	177-H1	STR018

EN 1516:2020 – RESISTENZA ALL'IMPRONTA RESIDUA

Instruments	Manufacturer	Model	Technical sheet
Metal frame	Labosport International	NA	STR374
Timer	RS	328-011	STR077
Depth caliper	Mitutoyo	Absolute VDS15AX	STR307
Datalogger	Testo	177-H1	STR018

EN ISO 2813:2014 – BRILLANTEZZA SPECULARE

Instruments	Manufacturer	Model	Technical sheet
Gloss meter	Elcometer	480	STR094

EN 1569:2020 – CARICO ROTANTE

Instruments	Manufacturer	Model	Technical sheet
Rolling load machine	Labosport International	NA	STR073
Depth caliper	Mitutoyo	Absolute VDS15AX	STR307
Datalogger	Testo	177-H1	STR018

ADDITIONS, DIFFERENCES OR EXCLUSIONS FROM THE TEST METHOD

None.

COMMENTS ON THE TESTS

None.

ADDITIONAL INFORMATION

None.

Laboratory Director
Roberto Armeni

End of the Test Report

STATEMENT OF CONFORMITY

Referred to the Test Report

20-0688IT

THE PRODUCT

PAVISINT SL 75 5+2

Submitted by the company:

CASALI SPA

Has been tested in accordance with the EN14904:2006 standard and found to meet the requirements of the following points. 4 – Requirements for safety in use and 5 – Technical requirements. Following are the compliant parameters.

Shock absorption
Vertical deformation
Vertical ball behaviour
Friction
Resistance to wear
Resistance to impact
Resistance to indentation
Specular gloss
Resistance to a rolling load

Laboratory Director
Roberto Armeni

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