

# LABOSPORT

## LABORATORY TESTS

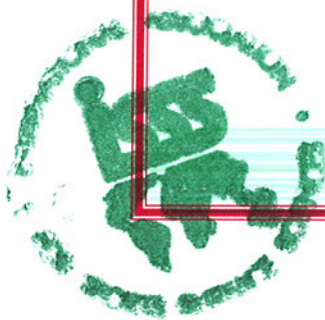
### INDOOR SPORT SURFACE

**Product : « OMNISPORTS EXCEL »**  
glued installation

**Company : TARKETT FRANCE -**  
Division Sports Indoor

**Report n° R082417-B3**

**Le Mans, 01/03/2010**



#### Scope of application

According to EN 14 904 (June 2006)

Surface for sports areas

Specification for indoor surfaces for multi - sports use.



The accreditation delivered by COFRAC certifies the competence of the laboratories to undertake specific tests covered by the accreditation

Accreditation N° 1-2113

"list of accredited sites and range(s) communicated on request"

\* Only tests results marked with an asterisk are covered by the accreditation

**This report cancels and replaces the report R082417-B2, due to a modification in the company name. We ask you to destroy the previous document and we inform you that we disclaim all responsibility in case of use or circulation of the report R082417-B2.**

This report contains 9 pages including 2 annexes.

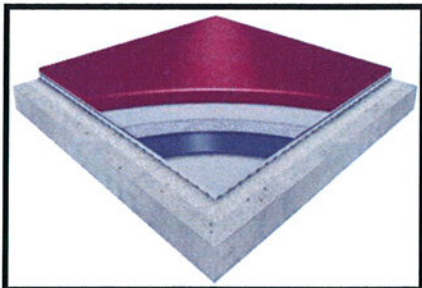
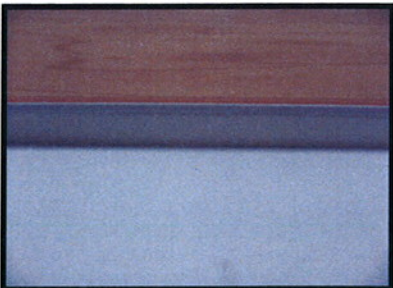
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The results are only valid for the above sports surface.

**1. APPLICANT**

<b>Firm</b>	TARKETT FRANCE - Division Sports Indoor
<b>Date of order</b>	09/02/2009
<b>Date of samples received</b>	06/02/2009
<b>Sample reference</b>	004293, 004294, 004295, 004200

**2. IDENTIFICATION**

<b>Product name</b>	OMNISPORTS EXCEL																										
<b>Description</b>	<p>Vinyl sports floor covering over fibreglass mat with PVC foam backing.</p> <p>Sanitized® (anti-bacterial coating)</p> <p>Protected with Top Clean XP® (dirty-resistant treatment for ease of maintenance)</p> <p>Installation : Glued</p> <p>Base : Concrete</p>																										
<b>Picture</b>	 																										
<b>Identification</b>	<table> <tr> <th></th><th><b>Manufacturer declaration</b></th><th><b>Labosport results</b></th><th><b>Units</b></th></tr> <tr> <td><b>Total thickness</b></td><td>8,3</td><td>8,3</td><td>mm</td></tr> <tr> <td><b>Mass per unit area</b></td><td>6,15</td><td>6,16</td><td>kg/m<sup>2</sup></td></tr> <tr> <td><b>Mass per unit volume</b></td><td>-</td><td>743</td><td>kg/m<sup>3</sup></td></tr> <tr> <td><b>Hardness</b></td><td>-</td><td>76</td><td>shore A</td></tr> <tr> <td><b>Colour</b></td><td>Maple</td><td>Maple</td><td>-</td></tr> </table>				<b>Manufacturer declaration</b>	<b>Labosport results</b>	<b>Units</b>	<b>Total thickness</b>	8,3	8,3	mm	<b>Mass per unit area</b>	6,15	6,16	kg/m <sup>2</sup>	<b>Mass per unit volume</b>	-	743	kg/m <sup>3</sup>	<b>Hardness</b>	-	76	shore A	<b>Colour</b>	Maple	Maple	-
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### 3. SCOPE OF TEST PROGRAMME & DESCRIPTION OF TESTS CARRIED OUT

The system was tested in accordance with NF EN 14904 : Surfaces for Sports Areas - Indoor Surfaces for Multi-Sports Use - Specification (June 2006), using the following test procedures :

#### 3.1 Player/surface interaction

##### 3.1.1 Friction

Surface friction is measured in accordance with NF EN 13036-4 using the Stanley RRL Pendulum fitted with the CEN rubber slider.

##### 3.1.2 Shock absorption\* and Deformation\*

The COFRAC accreditation delivered to LABOSPORT certifies that this laboratory is competent to undertake laboratory tests according to the followings norms:

- NF EN 14808: Determination of the shock absorption (March 2006)
- NF EN 14809: Determination of standard vertical deformation (March 2006)

##### 3.1.3 Test procedure

Principle: *Determination of Shock Absorption*

A mass is allowed to fall onto a spring that rests, via a load cell and test foot on the test specimen, and the maximum force applied is recorded. The percentage reduction in this force relative to the maximum force measured on a concrete surface is reported as the 'Force Reduction'.

Principle: *Determination of Standard Vertical Deformation*

A mass is allowed to fall onto a spring that rests, via a load cell and test foot, on the test specimen and the maximum and standard deformation of the surface is determined.

##### 3.1.4 Test conditions

The tests are realised indoor where temperature and air humidity are controlled.

Test conditions:      Temperature: 22 - 24 °C      Air humidity: 50 - 52 %HR

##### 3.1.5 Test apparatus

The delivery of a test report carrying "COFRAC-TEST" logo guarantees the connection of the equipment used during the test to the International Unit System of (S.I.).

The equipments used for testing are the following:

Internal reference:      Acquisition system      A 04-00-00

### **3.1.6 Measurement Uncertainty**

A - The measurement uncertainty for the shock absorption test is  $XX \pm 2\%$

The uncertainty mentioned is the result of 2 types of uncertainties. These typical uncertainties were measured taking into account different components like means of measurement, tests conditions, the equipment uncertainty, number of measurements undertaken.

B - The measurement uncertainty for the Vertical Deformation test is  $XX \pm 0,96 \text{ mm}$

The uncertainty mentioned is the result of 2 types of uncertainties. These typical uncertainties were measured taking into account different components like means of measurement, tests conditions, the equipment uncertainty, number of measurements undertaken.

## **3.2 Technical aspects**

### **3.2.1 Ball/surface interaction**

Vertical ball rebound was measured in accordance with NF EN 12235 using a basketball.

### **3.2.2 Behaviour under a rolling load**

Behaviour under a rolling load was assessed in accordance with NF EN 1569.

### **3.2.3 Resistance to wear**

Resistance to wear was measured in accordance with EN ISO 5470-1 using the Taber Abrader fitted with H18 wheels 1kg load. CS10 wheels 500g load are used on lacquered surface.

## **3.3 Reaction to fire**

EN 14904 states "if a claim for reaction to fire performance is made, the sports floor covering shall be tested and classified according to the requirements of EN 13501-1 and the resulting class and subclass shall be declared. If it is decided to make no claim for reaction to fire performance, i.e. it is decided to place the product of family of products on the markets as Class F<sub>fl</sub>, no testing is required for this product or family of products."

This test was not requested by the applicant.

## **3.4 Formaldehyde emission**

EN 14904 states "when formaldehyde-containing materials have been added to the product as part of the production process, the products shall be tested and classified into one of two classes E1 or E2". It also states, "the test requirement does not apply to sports floor coverings to which no formaldehyde-containing materials were added during production or post production processing. It is not necessary to be classified, but may, without any testing be declared as Class E1".

This test was not requested by the applicant.

### **3.5 Content of pentachlorophenol (PCP)**

EN 14904 states "sports floor coverings shall not contain pentachlorophenol or a derivative thereof as a component in the production process of the product or of its raw materials.

In cases where verification is required, if the content is less than 0,1 % by mass by the method described in Annex C (of En 14904), this requirement shall be considered to be met".

This test was not requested by the applicant.

### **3.6 Specular gloss**

Specular gloss was assessed in accordance with EN ISO 2813 using a reflectometer and a white light source at 85°.

### **3.7 Specular reflection**

Specular reflection was measured in accordance with pr EN 13745 using a spectrophotometer and light source d8 at 85°.

### **3.8 Static load (indentation)**

Resistance to static load was in accordance with NF EN 1516. The static load was 500 N acting on an area measuring 3 cm<sup>2</sup> for a period of 5 hours. The residual penetration was measured after 24 hours.

### **3.9 Impact strength (resistance to impact)**

Impact resistance was measured in accordance with NF EN 1517. The sample was conditioned prior to test for 14 days at 50°C and tested at 10°C.

### **3.10 Resistance to repeated impact**

Resistance to repeated impact was measured in accordance with TS 15122. This test is for information only, is non-mandatory and has no requirements.



#### 4. RESULTS

Tests	Units	Requirements	Results	Uncertainty	Pass or Fail
Friction	-	80 - 110	103	$\pm 4$	Pass
Shock absorption*	%	25 - 75	33*	$\pm 2$	Pass
Vertical deformation*	mm	$\leq 5,0$	1,3*	$\pm 0,20$	Pass
Vertical ball rebound	%	$\geq 90$	99	$\pm 1$	Pass
Rolling load	mm	$\leq 0,50$	0,10	$\pm 0,10$	Pass
	-	No damage	No damage	-	Pass
Resistance to wear	g	Synthetic surface : $\leq 1,00$	0,129	$\pm 0,01$	Pass
Specular gloss	%	Matt : $\leq 30$	10,8	-	Pass
Resistance to indentation	mm	$< 0,50$	0,29	-	Pass
Resistance to impact	-	Synthetic surface: no damage (no cracks, no indentation $>$ 0,5mm)	No damage	-	Pass
Reaction to fire	Reaction to fire was not assessed as part of this test programme				
Formaldehyde Emission	Formaldehyde emission was not assessed as part of this test programme				
Content of Pentachlorophenol	Content of pentachlorophenol was not assessed as part of this test programme				
Repeated impact <sup>1</sup>	-	-	-	-	-
Specular reflectance <sup>1</sup>	-	-	42,4	-	-

<sup>1</sup> Test on option

<sup>2</sup> Non applicable

## 5. CONCLUSION

The results of the tests below mentioned, covered by the COFRAC accreditation, comply with the requirements of NF EN 14904 standard (June 2006) :

- Shock absorption
- Vertical deformation


The results of the tests below mentioned, not covered by the COFRAC accreditation, comply with the requirements of NF EN 14904 standard (June 2006) :

- Friction
- Vertical ball rebound
- Rolling load
- Resistance to wear
- Specular gloss
- Resistance to indentation
- Resistance to impact

The statement of global conformity remains the responsibility of the laboratory only.

In conclusion, the multi-sport surface **"OMNISPORTS EXCEL" in glued installation by TARKETT FRANCE - Division Sports Indoor** has been found to fully comply with the laboratory test requirements of NF EN 14904 (June 2006): *Surfaces for Sports Areas - Indoor Surfaces for Multi-Sports Use*

Le Mans, March 1<sup>st</sup>, 2010



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## Annex 1 : Shock absorption results

## MESURES DE LA REDUCTION DE FORCE

N° d'enregistrement : 082417

Date : 16/02/2009

Opérateur : FP

Programme utilisé : athlete\_110806\_DT9816

Appareil utilisé: Athlète A04-00

Température (°C) : 22,8

Hygrométrie (%) : 53,3

\*\*\*\*\*

Point	n°	120Hz odr2(%)	120Hz odr9(%)	220Hz odr2(%)	220Hz odr9(%)	Energie (%)
Epaisseur :8,29mm au point A						
A	1	34,11	35,12	34,74	33,66	47,02
A	2	32,71	34,2	33,28	31,74	49,65
A	3	32,46	34,26	33,09	31,63	50,99
Epaisseur :8,29mm au point B						
B	1	33,81	34,98	34,57	33,03	47,34
B	2	32,36	34,07	32,82	31,23	50,32
B	3	31,88	34	32,55	30,96	51,33
Epaisseur :8,29mm au point C						
C	1	33,47	34,72	34,14	32,95	48
C	2	32,31	34,03	32,76	31,2	49,32
C	3	32,11	34,05	32,62	31,19	50,65
Epaisseur :8,29mm au point D						
D	1	34,24	35,31	34,87	33,87	44,78
D	2	33,13	34,71	33,57	32,44	47,67
D	3	32,61	34,18	33,2	31,52	50,32

Date : 10/06/2009

Opérateur : FP

Programme utilisé : athlete\_110806\_DT9816

Appareil utilisé: Athlète A04-00

Température (°C) : 23.8

Hygrométrie (%) : 51.6

\*\*\*\*\*

Epaisseur :8,29mm au point A						
A	1	34,03	33,98	35,25	34,78	45,41
A	2	32,89	33,13	33,93	33,4	47,67
A	3	32,77	33,32	33,73	33,07	48,33
		32,52				



## Annex 2 : Vertical deformation results

## MESURES DE DEFORMATION PONCTUELLE

N° d'enregistrement : 082417

Date : 16/02/2009

Opérateur : FP

Programme utilisé : athlete\_110806\_DT9816

Appareil utilisé: Athlète A04-00

Température (°C) : 23,7

Hygrométrie (%) : 50,3

\*\*\*\*\*

Point	n°	F Max (kN)	Déf R (mm)	Déf STV (mm)
A	1	1,59	-1,36	-1,28
A	2	1,59	-1,38	-1,3
A	3	1,58	-1,41	-1,33
B	1	1,59	-1,39	-1,31
B	2	1,58	-1,38	-1,31
B	3	1,58	-1,38	-1,31
C	1	1,59	-1,53	-1,44
C	2	1,59	-1,48	-1,4
C	3	1,59	-1,49	-1,41
				-1,34