



*Grabo*  
**sport**

**VariUse**

THE MULTIPURPOSE  
SPORTS FLOOR



# COMPANY INFORMATION

You are holding in your hands Graboplast's brand new product brochure, known as VariUse.

Before we start describing this floor covering both for sports and other purposes in detail, let us introduce our company in a few words.

Graboplast manufactures indoor wood and PCV floor coverings in Hungary. Headquartered in Győr in the industrial centre of Western Hungary.

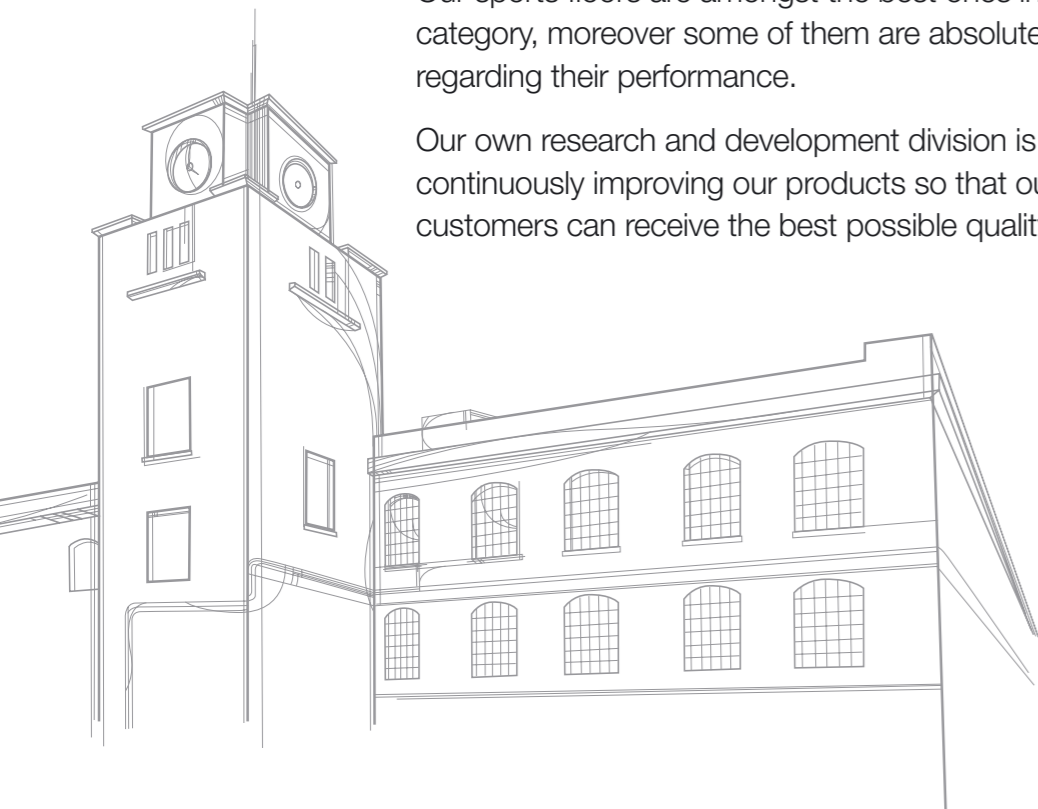
During our 115-year history as a result of constant innovation and development we have become the leading special floor producer in Central Europe.

The products, that are manufactured using cutting edge technology, are shipped to over 100 countries worldwide.

Graboplast has been manufacturing its products such as the sports floor for decades with impeccable quality.

Our sports floors are amongst the best ones in their category, moreover some of them are absolute leaders regarding their performance.

Our own research and development division is continuously improving our products so that our customers can receive the best possible quality.



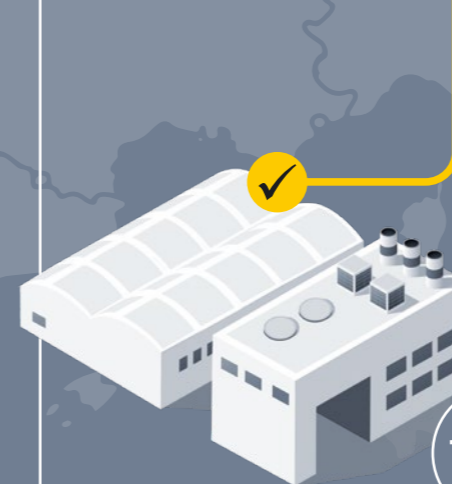
WE MANUFACTURE OUR PRODUCTS AT THREE SITES IN HUNGARY IN ACCORDANCE WITH **ISO 9001** AND **14001** QUALITY AND ENVIRONMENTAL MANAGEMENT SYSTEM STANDARDS.



1905

## GYŐR

Our factory in Győr, founded in 1905, is one of the most advanced PVC flooring factories in Europe thanks to its continuous modernisation and development. Among other products, our state-of-the-art competitive sports floors are manufactured at this site.



1998

## TATABÁNYA

Built in 1998 as a greenfield investment and expanded in 2016 with a new production line through which we can ensure a broad range of products to our customers.



1997

## KECSKEMÉT

During an acquisition in the late 1990s we modernised our parquet factory in many stages, which means that today we manufacture sports and other types of parquets using a technology that complies with the requirements of our age. The main characteristics of these products are their reliability and aesthetic appearance.

# VariUse

## MULTIPURPOSE SPORTS FLOOR

### A MULTIPURPOSE SPORTS FLOOR NEEDS TO MEET 4 CRITERIA:

- › It must be suitable for sports and ensure appropriate protection for joints and ligaments for all groups, including children, adults, professionals and hobby athletes.
- › It must be suitable for non-sport activities such as ball games, presentations, school or social events.
- › It must be resistant to normal impacts resulting from general use, not just sports.
- › Last but not least it must meet sports floor standards (e.g.: EN 14904, ASTM F 2772)

Based on independent testing, VariUse has been determined to completely correspond to the EN 14904 indoor sports floor standards. Its joint protective capacity is proven by the P1 category shock absorption value, which ensures the preservation of the skeletal system for those who play sports on a regular basis.

The same is also evidenced by the Class 2 designation based on the ASTM F 2772 standard, which is also confirmed by testing conducted by an international testing institute.



VARIUSE MEETS THE  
REQUIREMENTS OF  
EN 14904 SPORTS  
STANDARD.

P1 CATEGORY  
SPORTS FLOOR  
WITH GENUINE  
JOINT  
PROTECTION



# VariUse

## WHOM IS VARIUSE RECOMMENDED TO?

### DESIGNERS

- > With VariUse, surface design problems can be solved in a single step.
- > You don't need to make a **compromise** between sports and non-sports activities due to the floor's performance capacity.



### CONTRACTORS

- > VariUse is an implementation friendly multipurpose sports floor.
- > The product is characterised by an exceptionally **short relaxation period** because of its structure. It is almost immediately **free of tension** after it has been laid out.
- > After acclimatisation to temperature, floor may be **fixed into place after 6 hours**.
- > VariUse is available in a 2-metre-wide roll. Due to its width there is **less welding** needed and the **installation is quicker**.



### MAINTENANCE OPERATORS

- > **No protective covering is required** if the floor is used for non-sports activities. Two functions may be achieved with one product. No extra personnel are required to coil the protective covering thus saving both time and money. You don't have to worry about storing the protective covering.



- > **Thanks to the XPUR surface** shoes, furniture and equipment do not leave any permanent marks on the surface. **It's easy to clean** and requires less chemicals and time to clean.

- > Because of its glass fibre reinforcement, **VariUse's dimension stability is exceptional**, so you don't have to worry about any gaps and shrinkage.

- > Thanks to its structure and strengthened upper coating, VariUse is a durable, long-term solution for which we provide a **15-year guarantee**.



### USERS

- > **Cartilage and joint friendly flooring** suitable for all kinds of sports activities.
- > Its optimal surface adhesion helps you quickly change direction and **protects you from accidents caused by slipping**.
- > Its combined foam back is capable of great energy absorption and rapid recovery, thus ensuring a **stable basis for exceptional sports performances**.
- > Its very low indentation, strengthened top layer, outstanding chemical resistance and easy maintenance **make it the perfect choice for hosting non-sports events**.



# FACTS NEVER LIE

The following aspects were contrasted which also play a role in everyday use.

- 1 DURABLE FORM CHANGES AFTER INDENTATION / RECOVERY  
*IN-HOUSE METHOD*
- 2 STANDARD INDENTATION RESISTANCE TEST  
*STANDARD METHOD*
- 3 IMPACT RESISTANCE TEST  
*IN-HOUSE METHOD*
- 4 ABRASION RESISTANCE TEST  
*STANDARD METHOD*
- 5 FOAM STRUCTURE  
CONTRAST
- 6 RELAXATION ABILITY - FLEX INDEX  
*IN-HOUSE METHOD*



WE COMPARED  
**VARIUSE** WITH  
A SIMILAR PURPOSE  
PRODUCT FROM  
ONE OF OUR  
FRENCH  
COMPETITORS



TEST

# 1 FORM CHANGES AFTER INDENTATION

Because of the strengthened wear layer its resistance to indentation is exceptional in this sports floor category.

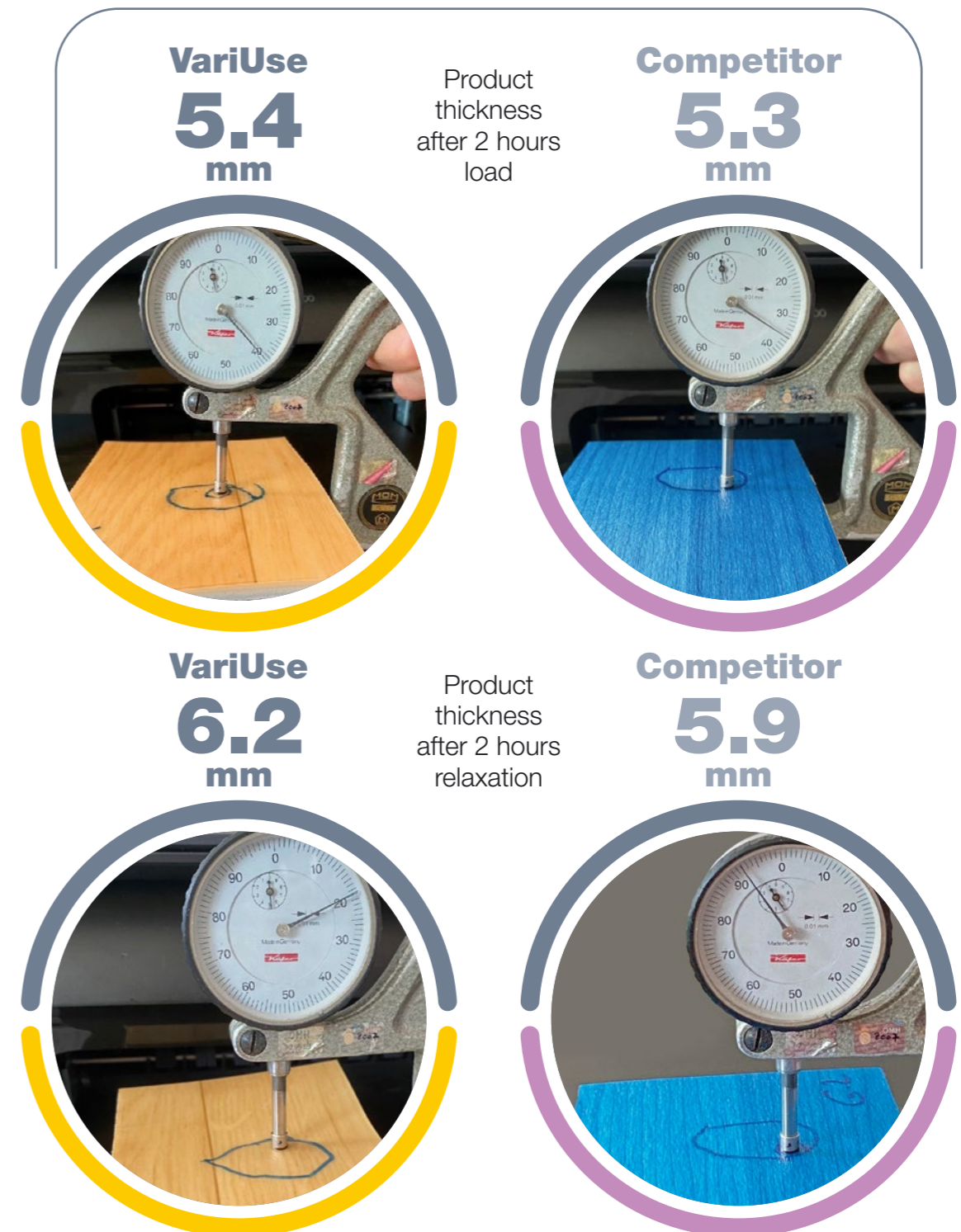
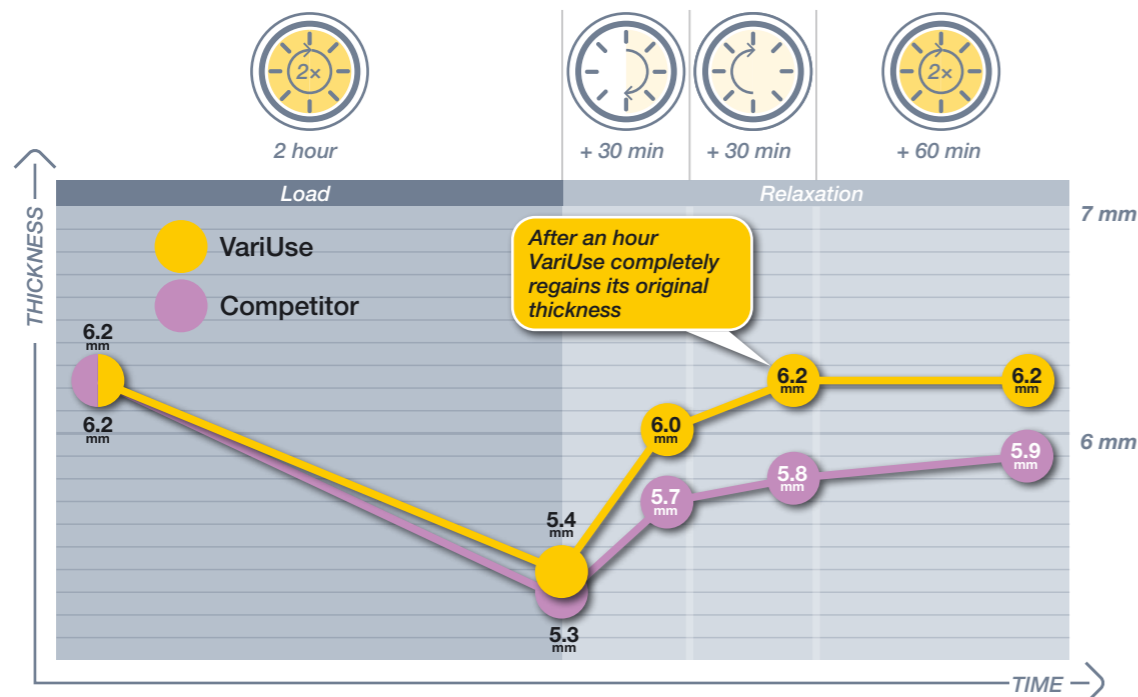
We can confirm these statements with facts, pictures, and valid testing.

We measured the depth of surface indentation in identical conditions by comparing it with one of our competitor's products.

During the test we placed 2-2- samples from VariUse and the competitor's product under the 4 legs of a chair that was loaded with 115 kg-s weight.



After two hours, we removed the samples and measured their thickness which was originally 6,2 mm-s and then repeated the measurements after half an hour, an hour, and two hours.



**CONCLUSION**  **AFTER AN HOUR VARIUSE COMPLETELY REGAINS ITS ORIGINAL THICKNESS,** while its competitor failed to do the same even after 2 hours.

# 2

TEST

## STANDARD INDENTATION RESISTANCE TEST

One of the most important criteria for products intended for commercial use is residual indentation. During testing the floor is subjected to a 50 kg/cm<sup>2</sup> load for 150 minutes and then after the same amount of relaxation time they measure the indentation.

This is the relevant indentation test for those floors which are used for non sports activities too.

VariUse  
**0.24**  
mm

Depth of the indentation

Competitor  
**0.43**  
mm

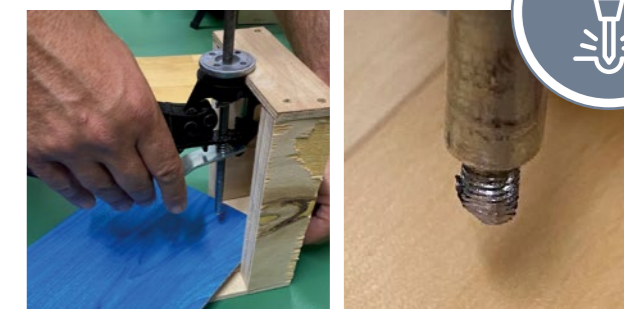


TEST

# 3

## IMPACT RESISTANCE TEST

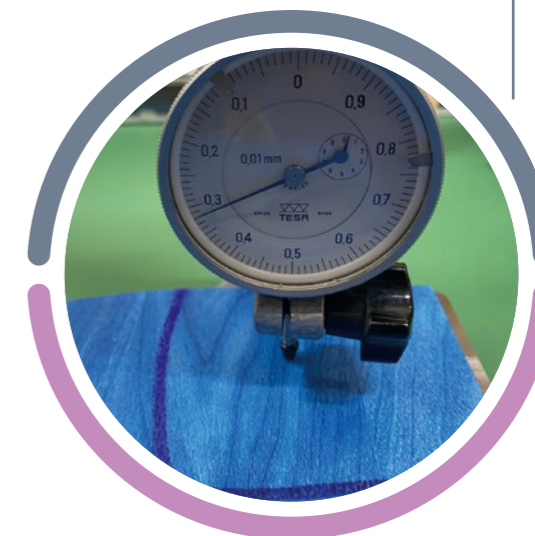
We conducted our test using a sharp metal object designed especially for this purpose which we shot into the surface area using a spring gun



VariUse  
**0.17**  
mm

Depth of the damage

Competitor  
**0.32**  
mm



CONCLUSION



DURING THE RESIDUAL INDENTATION TEST FOR COMMERCIAL FLOORS

**VARIUSE ACHIEVED TWICE BETTER RESULTS**

THAN ITS FRENCH COMPETITOR PRODUCT.

CONCLUSION



**VARIUSE IS MUCH MORE RESISTANT** AGAINST SHARP OBJECTS THAN THE COMPETITOR'S PRODUCT.

# 4

TEST

## ABRASION RESISTANCE

We tested the two products under controlled condition using the well proven Taber abrasion tester.

During our testing process we used a H18 abrasive disk and registered the results after 200 abrasion cycles.

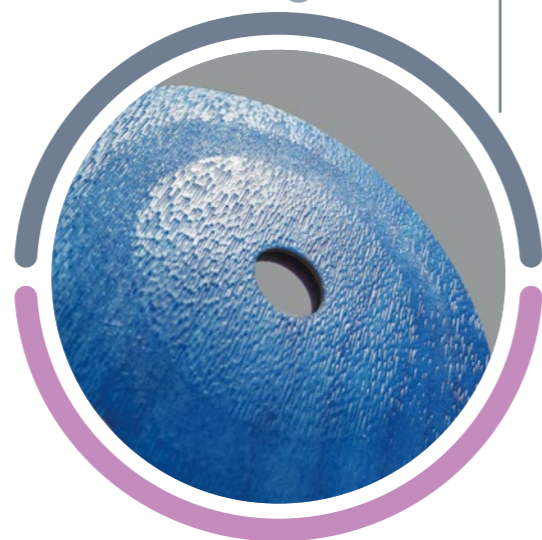


TABER TEST

VariUse  
**49**  
mg

amount of worn material

Competitor  
**96**  
mg



CONCLUSION

BASED ON THE STANDARD ABRASION TEST RESULT,  
**VARIUSE HAS A LONGER LIFESPAN**

# 5

TEST

## FOAM STRUCTURE COMPARISON

The magnified images clearly show the differences between the two products' foam structures.

VariUse's closed cell, well-fitting and thick foam structure provides a **more balanced performance**.

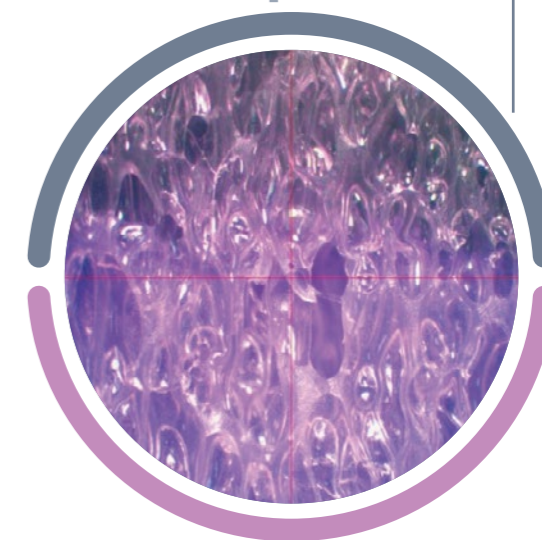
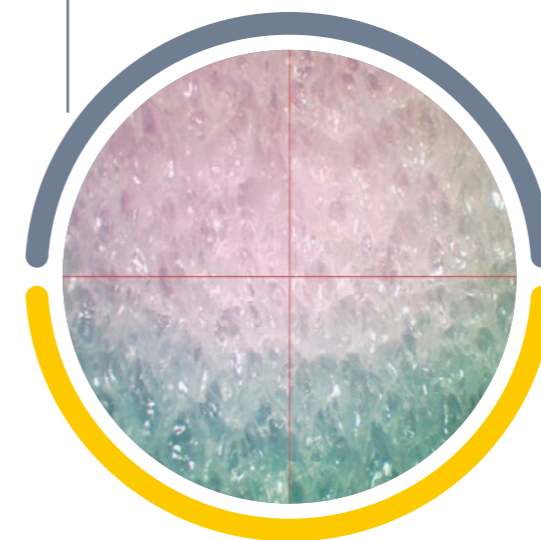
In a case of the French competitor's product that is apparently not a uniform structure, it contains ruptured cells in some places, therefore its structure is less balanced.

Based on the loose foam structure above it is understandable that the competitor's product has worse mechanical properties and tension that results in an uneven surface in a relaxed state.

VariUse

Images taken at 5x magnification

Competitor



CONCLUSION

BASED OF THE WELL-FITTING FOAM STRUCTURE,  
**VARIUSE IS A MORE DURABLE AND RELIABLE PRODUCT**



# 6

## TEST

# FLEXINDEX

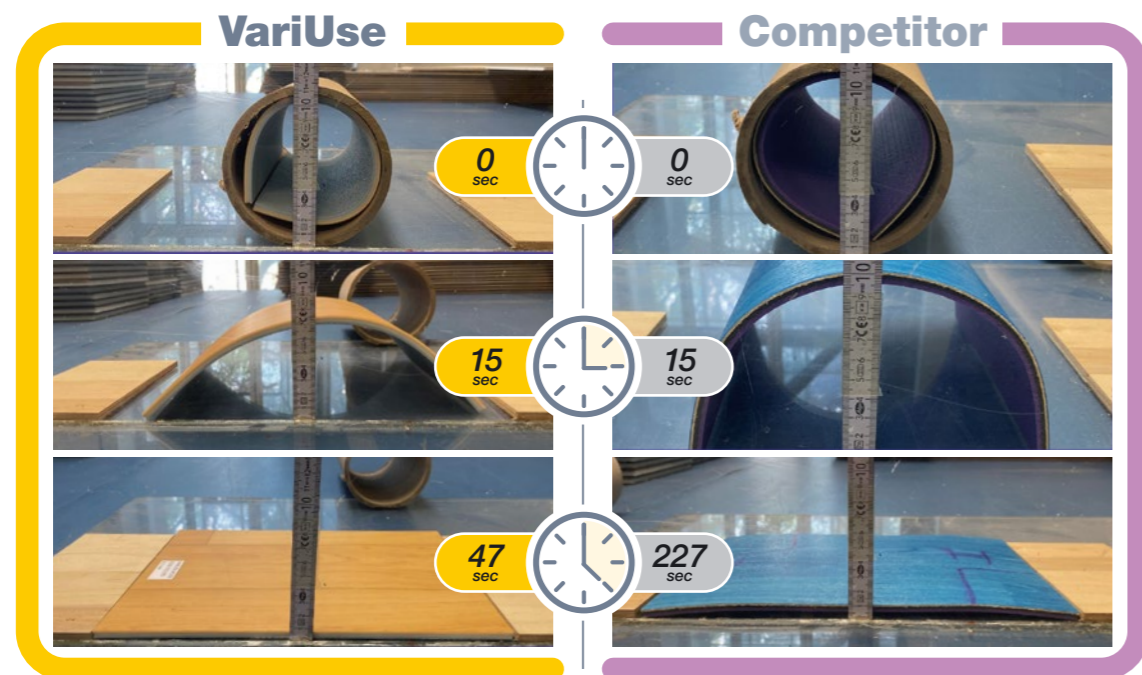
Flexindex is our own developed indicator, which shows the total time it takes the product to become flat after unrolling.

**Method:** The Floor (A4 size) folded on to a paper tube (d=103 mm) for two hours then, left free and measured the required time for its full spread

**A flexindex categories:**

<b>Category A</b>	flat extends in 0-60 seconds
<b>Category B</b>	flat extends in 60-120 seconds
<b>Category C</b>	flat extends more than 120 seconds

**VariUse expands faster**, while the competitor's product does not achieve a flat surface after a long period of time.



## SUMMARY

Based on the comparative and independent institutional tests, it can be stated that **VariUse** is:

- ✓ outperforming a competitor product of similar purpose in several aspects
- ✓ perfect solution for sport and non-sporting events
- ✓ joint-protecting and safe to use
- ✓ excellent in terms of dimensional stability, wear resistance and indentation
- ✓ durable, strong, and perfectly structured
- ✓ cost-effective and easy to install
- ✓ stain- and chemical-resistant, easy to keep clean



# VariUse

CONCLUSION



**VARIUSE IS A TENSION FREE PRODUCT,**  
THEREFORE FASTER AND EASIER TO INSTALL



The new generation of polyurethane surfaces Grabo's new surface treatment combines state-of-the-art technology with a customized, special lacquer formula.



High energy absorption due to the bottom foam layer → **comfort and protection**  
Optimized deformation shape through the upper foam layer → **easy direction change**



GraboSAN treatment stops the growth of germs → **reduced risk of contamination in case of injuries.**



Due to its special treatment, top layer periodical renewal is not necessary. Therefore they can be used continuously, **reduced life cycle costs, less chemicals and less energy consumption.** Environmentally sound product with reduced maintenance costs.



Our products are made by technology procedures without using solvents and heavy metals.

# VariUse

## PRODUCT DATA SHEET

Surface	X PUR scuff resistant surface		
Thickness	mm	EN ISO 24346	6,2
Top layer	mm	EN ISO 24346	2,0
Weight	kg/m <sup>2</sup>	EN ISO 23997	4,2
Width	m	EN ISO 24341	2
Standard roll length	m	EN ISO 24341	20

### CLASSIFICATION

Product specification	EN 14904 indoor vinyl sports floor P1 category		
Flammability	-	EN13501	C <sub>fl</sub> -S1
Impact resistance	-	EN 1517	no damage

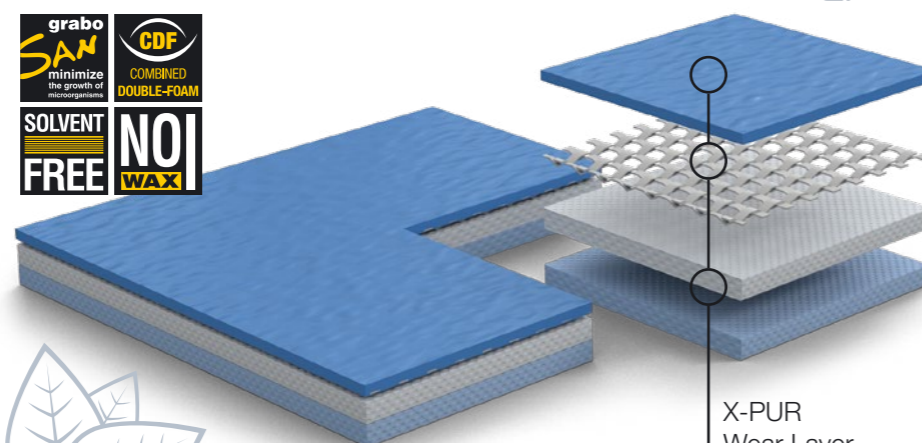
### SPORT PROPERTIES

Friction		EN13036-4	80-110
Shock absorption	%	EN 14808	≥25 (P1)
Vertical deformation	mm	EN 14809	max. 2.0
Ball rebound	%	EN 12235	98
Specular gloss		EN 2813	≤ 30

### TECHNICAL CHARACTERISTICS

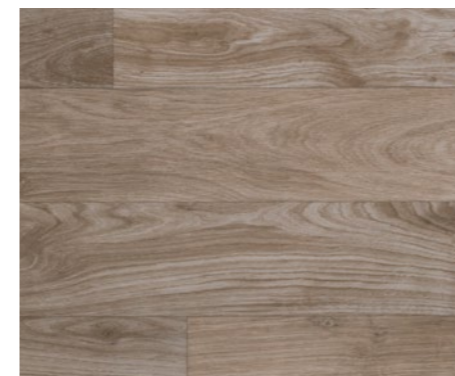
Dimensional stability	max. %	EN ISO 23999	+/-0.2
Indentation resistance	mm	EN 1516	<0.5
Resistance to rolling load	1500 N	EN 1569	no damage
Colour fastness		ISO 105 B02	6
Resistance to chemicals		EN ISO 26987	✓
Abrasion resistance	Max. 1000 mg /1000 cycles	EN ISO 5470-1	<250 mg/1000 cycle

## CONSTRUCTION



X-PUR  
Wear Layer  
Glass Fiber  
Reinforcement  
Combined  
Foam Backing

## AVAILABLE COLOURS



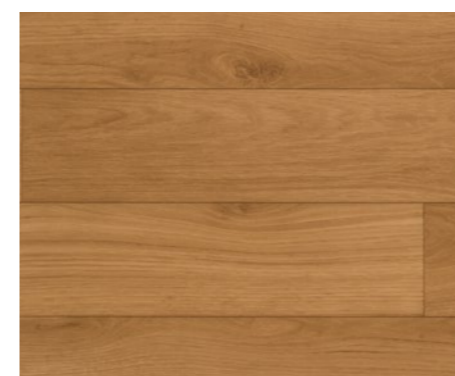
1171-371 width of lamella: 100 mm



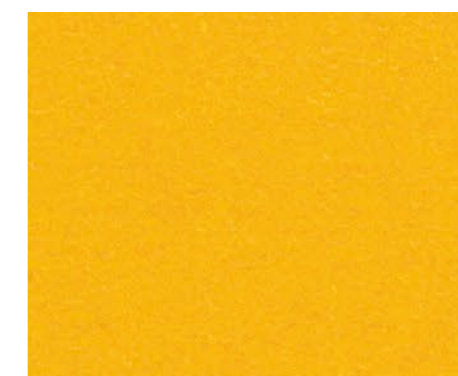
3254



4289



2209-371 width of lamella: 100 mm



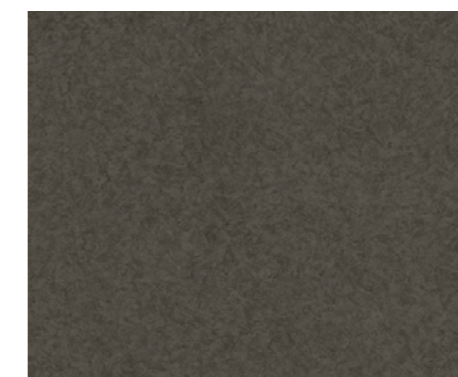
3096



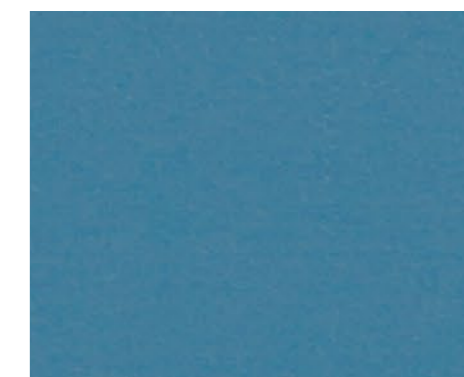
7148



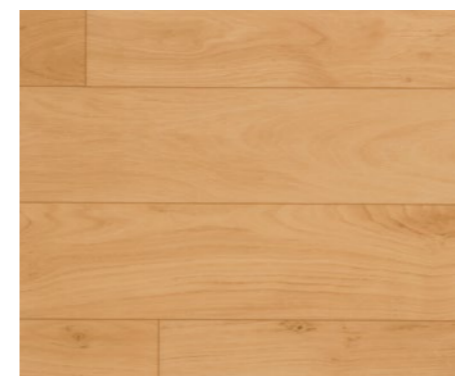
2000-378 width of lamella: 62,5 mm



386-868



6170



2519-371 width of lamella: 100 mm



1596



1360

# VariUse



**GRABOPLAST**

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