

## FLOORS FOR LIFE

### Game lines and maintenance lacquer

The PBT Sport Floors are prefinished with a hardwearing multi-coating UV hardened lacquer system, complying with EN 14904, ready for use straight after installation.

The normal procedure when applying game lines on a new floor is to first buff the floor, then apply game lines before applying an extra coat of lacquer as maintenance lacquer. This will protect the game lines and further extend the lifetime of the floor. Several recommended Polyurethane and Water based lacquers are available.

### Daily maintenance of the floor

The daily maintenance is normally limited to sweeping for dust removal and to maintain the friction of the floor. PBT Sport Flooring boards have high resistance against water, allowing frequent cleaning of the floor. This is best done with scrubber-dryer machines.



### Surface renovations

As long term maintenance the floor should be re-coated every 3-4 years on average, depending on the use of the floor. The existing maintenance lacquer on the floor is buffed before applying a new coat of lacquer. Being of 22mm thickness and of solid hardwood, the flooring boards can be sanded to bare wood and re-coated several times, ensuring extended lifetime with PBT Sport Floor solutions.



Crosscut of the PBT Sport Floor profile, scale 1:1



### Long term performance and durability

All components used in PBT SPORT Floor systems undergo stringent test procedures. This delivers long term performance of the entire flooring constructions. With proper maintenance any PBT Sports Floor solution is expected to last over 30 years. A great value for your investment and optimising your Total Cost of Ownership.





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**PERFORMANCE MEETS PERFECTION**



|| Best of sport performances depend greatly on the floors. Players should be able to trust and rely on the flooring to be safe and provide full support stability and resilience, while they can focus and channel their efforts on winning the game ||



At PBT SPORT this understanding has been our underlying philosophy. And we create sport floorings that understand the growing demands of today's sports and perform as the back bone of support for the players.



## THE BEST OF INGREDIENTS

PBTSPORT Floors are a result of unique creation technique integrated with the best of ingredients.

- Unique combination of Malaysian craftsmanship and Danish expertise.
- More than 25 Years of experience in creating the best of solid hardwood flooring for customers across the world.
- Creation of high quality sports flooring solutions using key technical know-how from Danish Engineers and Danish Designer with more than 15 Years of experience in Sport Floor Systems.
- Superior Sport Floor Systems that meet most stringent demands from athletes on performance and safety, designed with high standards of efficiency and security for the installers, and comes as durable, maintenance-friendly and long-lasting solutions for the benefit of the owners.
- Comprehensive technical support with full documentation and personalised consultancy service right from design phase, including specifications, laying instructions and maintenance guides complete our unique package.



## TRUSTED AND CERTIFIED FOR HIGH QUALITY



PBTSPORT Floors fully comply with the most stringent international standard EN 14904:2006. All PBTSPORT Floors are tested by The Technological Institute in Denmark and are marked CE in accordance with the EN 14342:2005 + A1:2008 and EN 13629 Standards.



## PERFECTED FOR OPTIMUM PERFORMANCE

The performance of a sport floor is based on the interaction between the floor surface and a resilient sub-construction. The demands of the ultimate floor depend on the sport played. At PBTSPORT, every step of the process-of-creation has been optimised to deliver the ideal floor performances suitable for athletes in most indoor sports, and our solutions reflect this.

- PBTSPORT Floors are made of solid hardwood boards, designated as Area Elastic Floors, providing optimum balance and stability under foot.
- Designed to provide optimum shock absorbency and resilience to athletes.
- Perfected for fast ball games like basket ball due to the high ball bounce level.
- Processed to ensure optimum friction features, thus minimizing sport injuries.
- Features heavy duty loading capacities way beyond the demands by the athletes.



## DELIVERED THROUGH STRINGENT PROCESSES

Created with unique 22mm solid hardwood boards and available in different wood species, PBTSPORTS Floorings are created through intensive and highly quality controlled processes.

- Designed with finger jointed, glued stave joints, glued center joint & sealed board ends and waxed edges.
- Treated to offer better resistance against water, cleaning products and resin removers.
- All boards are UV-lacquered on the surface and comply with EN 14904:2006 standards.
- Special Squash surface available.
- Backside lacquered for optimal moisture stability. Special squash surface available.
- Extensively moisture controlled and available in 2 moisture levels to suit various climatic conditions.
- Remove the moisture protecting wrapping and install straight away - no onsite conditioning required.



Standard PBTSports boards are available in Beech, Ash and Hevea species. Other wood species including Maple, Merbau and Tasmanian Oak can be supplied on request.



Beech



Ash



Hevea



Maple



Tasmanian Oak



Merbau

At PBT, it is our overall strategy to act environmentally and ethically correct in all aspects including our wood supply. Naturally, all wood used is taken from sustainable sources, and includes both MTCC, PEFC and FSC certified wood as well as plantation wood.



mtcc  
FCOC No.019

Malaysian Timber Certification Council



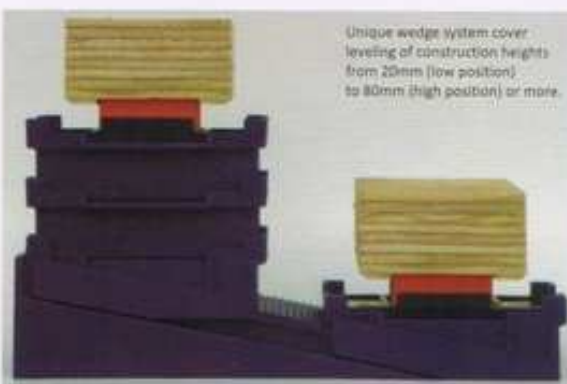
## ADVANTAGES THAT GIVE THE EDGE

Our indigenous technical know-how, combined with years of Danish expertise and more than 25 years of specialized experience in hardwood flooring, delivers distinct advantages.

- High performance range of batten systems, customised to suit various sub-floor conditions and construction heights all complying with EN 14 904, class A4.
- Battens are made from laminated Veneer Pinewood for optimum strength and stability.



- All systems are pre-fitted with high quality shock pads and deformation control to maximum 50% compression. This controls the deflections and prevents overloading of Shock pads, providing optimum strength and long term performance properties to the floors.



- Unique integrated leveling component to overcome challenges with uneven sub-floors or meet specific construction height is providing stable support of battens and speeds up the installation time.



- Medium performance sports clip system, featuring unique strength and durability, complying with EN 14 904, class A3.

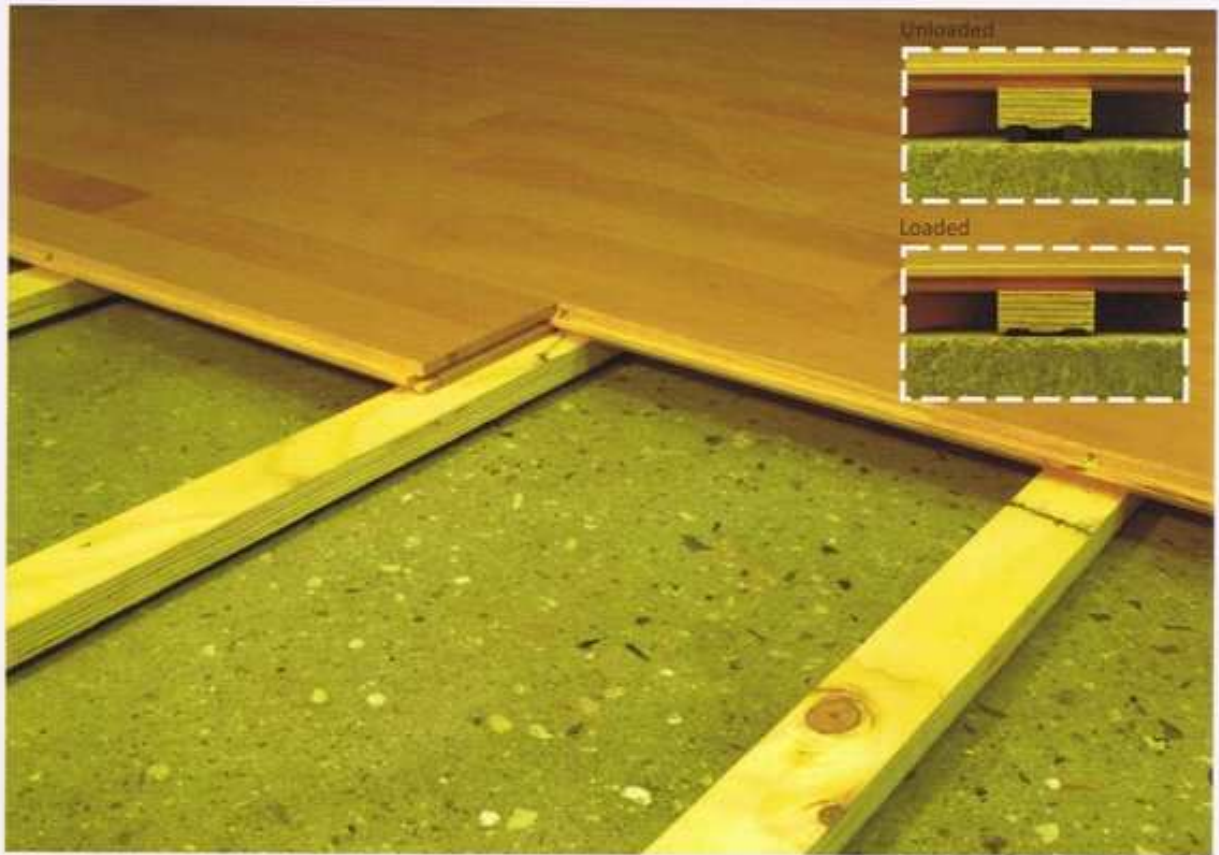


- Comprehensive package solution including boards, under carriages, nails, ventilated skirting along with clips & foams.





## PBT SPORT PRO I System



- Single batten system with high shock absorbency and resilience.
- Complies with EN 14904 - Class A4 standard.
- Installed floating directly over level concrete or in renovations over existing wooden or synthetic based subfloors.
- 50mm construction height with fast and easy to install system.
- Built-in deformation control gives maximum loading capacity and full protection of rubber strips against compression, securing long-term performance of the flooring.
- Choice of 2 batten distances depending on the floor wood species and the loading capacity requirements.

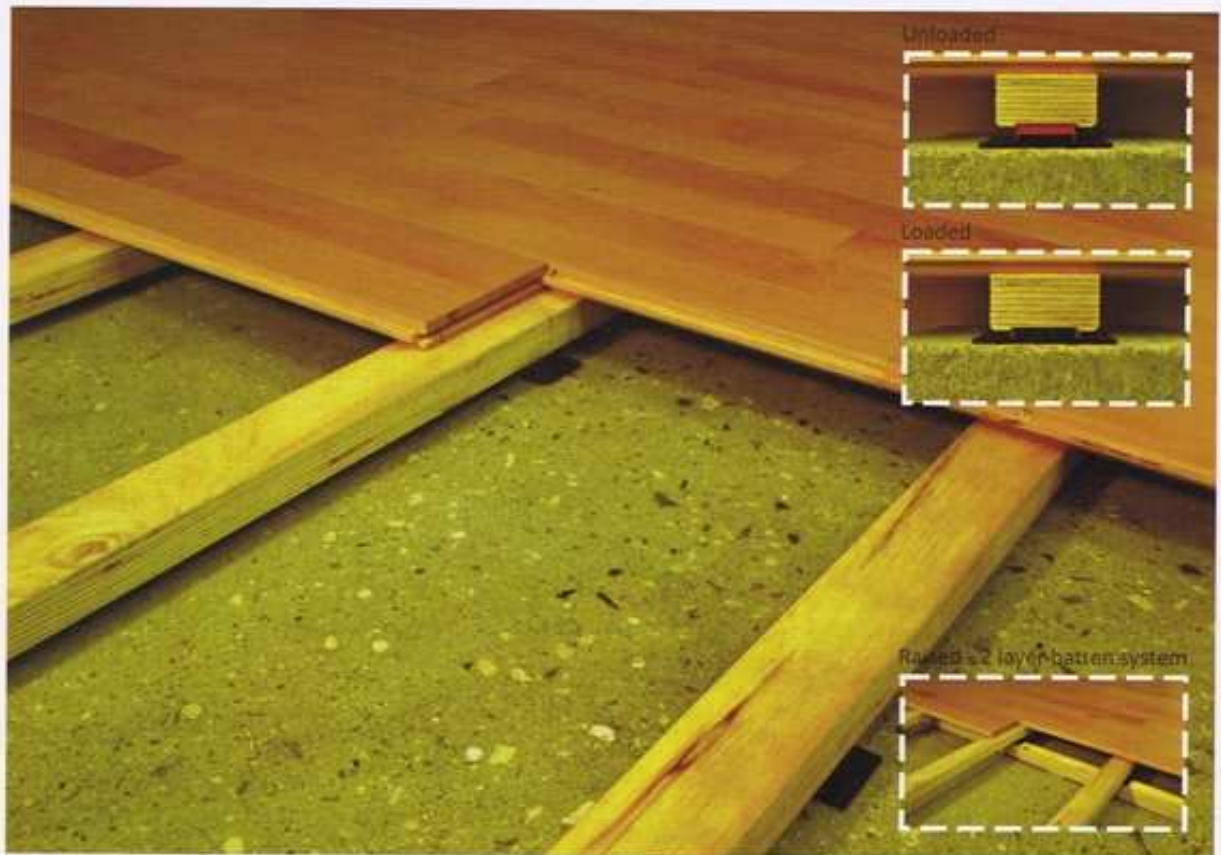


TEST METHOD	EN STANDARDS	EN DEMANDS ACC TO CLASS A4	TEST RESULTS AT C/C=363mm
Shock absorption [%]	EN 14904:2006	55 - 75	60
Standard deviation [mm]		2.3 - 5.0	2.8
Ball rebound [%]	EN 12335:2004	≥ 90	96
Rolling load [N]	EN 1569	Min. 1500	> 1500
Friction	EN 13036-4	80 - 110	80-90
OTHER TESTS			
Friction	DIN 18032	0.4 - 0.6	0.41
Loading Capacity	EN 1533	4.0 kN	5.0 / 6.0 kN

### COMPONENTS

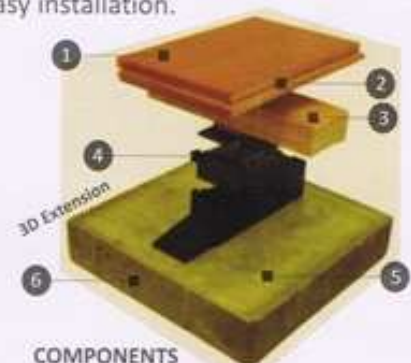
- ❶ 22 x 130 x 2.180mm floor boards.
- ❷ 2.2 x 45mm machine nails.
- ❸ PRO-I battens, 28x48x3600mm, including rubber strips, c/c 363.3mm or 311.4mm.
- ❹ Min. 0.20 mm PE-folio
- ❺ Concrete, levelled.

## PBT SPORT PRO II System



- Single batten system with high shock absorbency and resilience.
- Complies with EN 14904 - Class A4 standard.
- Installed over uneven concrete, using different leveling methods, depending on the construction height.
- For partial minor adjustment over partly leveled concrete use bitumen paper. The construction height, excl. packing, is 64mm.
- Using the unique wedge system and up to 2 raiser blocks, the floor system can covers construction heights from 84 to 144mm.
- For greater construction heights, the system can be made as a 2 layer batten system, using our 40x45mm raiser batten. In combination with the unique wedge system it covers construction heights from 138 to 198mm.
- Build-in deformation control of elastic shock pads and heavy duty loading capacity.
- Choice of 2 batten distances depending on the floor wood species and the loading capacity requirements.
- Fast and easy installation.

TEST METHOD	EN STANDARDS	EN DEMANDS ACC TO CLASS A4	TEST RESULTS AT C/C=363mm
Shock absorption [%]	EN 14904:2006	55 - 75	63
Standard deviation [mm]		2.3 - 5.0	2.6
Ball rebound [%]	EN 12335:2004	≥ 90	95
Rolling load [N]	EN 1569	Min. 1500	> 1500
Friction	EN 13036-4	80 - 110	80-90
OTHER TESTS			
Friction	DIN 18032	0.4 - 0.6	0.41
Loading Capacity	EN 1533	4.0 kN	5.0 / 6.0 kN

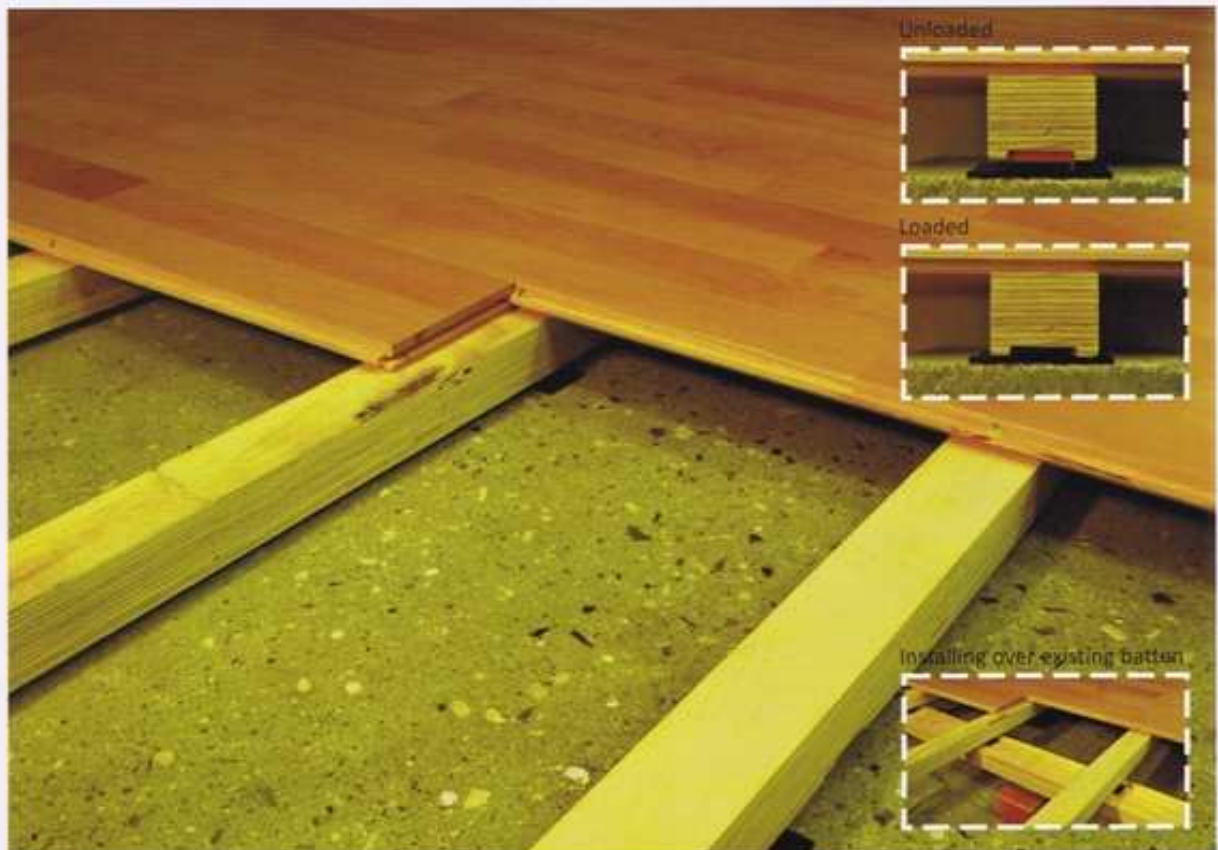


### COMPONENTS

- ① 22 x 130 x 2.180mm floor boards
- ② 2.2 x 45mm machine nails
- ③ PRO-II battens, 30x58x3500mm, c/c 363.3mm or 311.4mm
- ④ KTL wedges, 5.5 pcs./m<sup>2</sup>
- ⑤ Min. 0.20 mm PE-folio
- ⑥ Concrete



## PBT SPORT PRO III System

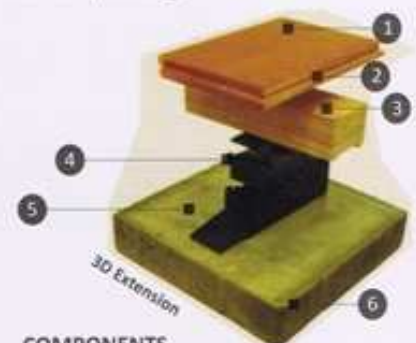


- Single batten system with high shock absorbency and resilience.
- Complies with 14904 - Class A4 standard.
- Installed over uneven concrete, this is our unique, fast to install and most cost effective batten system. Different leveling methods depending on the construction height.
- For partial minor adjustment over partly leveled concrete use bitumen paper. The construction height, excl. packing, is 76mm.
- Using the unique wedge system and up to 2 raiser blocks, the floor system covers construction heights from 96 to 156mm.
- Installed as an upper batten in a 2-layer system, this solution is ideal in renovations, where existing parquet flooring and upper

battens in old cross sectioned batten systems are replaced. Shorter installation time and cost saved on removal of material (as well as on new materials), makes this a great time saving and cost effective solution.

- Build-in deformation control of elastic shock pads and heavy duty loading capacity.
- Choice of 2 batten distances depending on the floor wood species and the loading capacity requirements.
- Fastest and most easy installation due to the reduced number of packings.

TEST METHOD	EN STANDARDS	EN DEMANDS ACC TO CLASS A4	TEST RESULTS AT C/C=363mm
Shock absorption [%]	EN 14904:2006	55 - 75	60
Standard deviation [mm]		2.3 - 5.0	2.5
Ball rebound [%]	EN 12335:2004	≥ 90	96
Rolling load [N]	EN 1569	Min. 1500	> 1500
Friction	EN 13036-4	80 - 110	80-90
OTHER TESTS			
Friction	DIN 18032	0.4 - 0.6	0.41
Loading Capacity	EN 1533	4.0 kN	5.0 / 6.0 kN



### COMPONENTS

- ① 22 x 130 x 2.180mm floor boards.
- ② 2.2 x 45mm machine nails.
- ③ PRO-III battens, 45x58x3500mm c/c 363.3mm or 311.4mm
- ④ KTL wedges, 3.7 pcs./m<sup>2</sup>
- ⑤ Min. 0.20 mm PE-folio
- ⑥ Concrete

## PBT SPORT CLIP System



- Medium shock absorbency and resilience performance characteristics.
- Complies with EN 14904 - Class A3 standard.
- Boards are laid with clips over an elastic foam underlay, installed floating over level concrete or wooden based subfloor. The total construction height incl. flooring board is 32mm.
- Special durable open cellular bonded foam material, with full recovery after loading, provides resilience and long term performance of the floor system.
- Unique locking clips at board ends make the use of glue superfluous.
- Two different clip sizes to suit various climatic conditions.
- The system features high level sound absorbing characteristics.
- Fast and safe installation.



TEST METHOD	EN STANDARDS	EN DEMANDS ACC TO CLASS A3	TEST RESULTS
Shock absorption [%]	EN 14904:2006	55 - 75	48
Standard deviation [mm]		2.3 - 5.0	2.3
Ball rebound [%]	EN 12335:2004	≥ 90	97
Rolling load [N]	EN 1569	Min. 1500	> 1500
Friction	EN 13036-4	80 - 110	80-90
OTHER TESTS			
Friction	DIN 18032	0.4 - 0.6	0.41
Loading Capacity	EN 1533	4.0 kN	5.0 / 6.0 kN

### COMPONENTS

- ① 22 x 130 x 2.180mm floor boards
- ② KTL Clips, S- or M-clips, 17 pcs./m<sup>2</sup>
- ③ X-clips in board joints, 4 pcs./m<sup>2</sup>
- ④ 10mm bonded foam
- ⑤ Min. 0.20 mm PE-folio
- ⑥ Concrete

## SELECTING A SPORT FLOOR

A Sports Floor is a long-term investment. Thus, when deciding on a sports floor, there are some important points you should consider achieving an optimised solution.



- ❶ Which sports activities are primarily going to be played on the floor?
- ❷ Any aesthetic requirements or possible demand for specific wood specie?
- ❸ Which Sport Floor System suits the construction height?
- ❹ Any special requirements to the loading capacity of the floor, e.g. in connection with fairs or mobile seating?
- ❺ Any special cleaning and maintenance requirements?
- ❻ Costs involved and the expected life cycle of the floor?

## CHOOSING PBT SPORT FLOORS

With PBTSPORT Floors you choose a solution that will put you at ease. Area Elastic Floors, being the most preferred type of flooring for indoor sports, are optimised by PBTSPORT for performance and perfected for demanding sports, ensuring that as a customer, you don't have to worry about the complexities and technical performances when specifying PBTSPORT Floors. All our solutions reach you after undergoing in-depth analytical studies, extensive quality control and stringent testing conditions.

- Created to suit top level athletes in fast ball games and multipurpose users in most indoor sports.
- Perfected for optimised shock absorbency resilience, ball-bounce and friction complying with EN 14904.
- Designed with better resistance against water, - minimizing long term maintenance routines and making it a highly cost effective solution.
- Integrated deformation controls deliver maximum loading capacity and enable heavy duty usages.
- Greater ROI (Return on Investment) for owners considering total installation costs, durability, possible surface renovations over the years and the expected lifetime of the floor system.

**All you need to do is ascertain your aesthetic requirement, construction height, and loading capacity in order to specify your optimum PBTSPORT Floor solution.**

Refer to the table on page 11 for the overview of various solutions available, and find more details on the Floor System pages. Technical information including specifications, laying instructions and maintenance guides can also be obtained to complete the documentation. And naturally, our eager and well-trained technicians are there to assist.

### Loading capacity

As standard, all flooring solutions features loading capacities way beyond the need required within indoor Sports. In cases where extraordinary loading capacities are required, e.g. in exhibitions, our 'Heavy Duty' solutions should be specified.

### Aesthetic

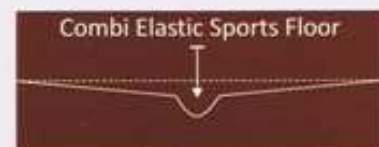
As standard wood species by PBT Sport, Beech, Ash and Hevea are all integrated in the table across. Among others, the wood species listed on page 4, can also be supplied when a specific look is in demand.



Wooden floor with a rigid surface and elastic subfloor, having a wide area of deformation, providing stability under foot, no matter the loading. Considered a fast floor makes it ideal for ball games.



Synthetic floor where the deformation of the surface is related to the area size of the load. The foot tends to stick to the floor at high loadings (increased friction), making it unsuitable for fast ball games due to the increased risk of injuries.



Area elastic floor with a point elastic synthetic surface, having a wide deformation area in the load distribution layer, but the deformation of the surface is still very much related to the area of the load.

SUITABILITY OF DIFFERENT FLOORS IN VARIOUS SPORTS			
Basketball	***	-	**
Handball	***	-	**
Volleyball	**	*	***
Badminton	***	*	**
Squash	***	-	-
Gymnastics	**	*	***
Indoor Hockey	***	-	**
Table Tennis	***	*	**
Aerobic	**	*	***
Fitness	***	*	**
Soccer	***	-	**
Tennis	-	***	*
Wheelchair Users	***	-	*
Chairs	***	-	*
Exhibitions	***	-	-
Mobile Seatings	***	-	-

**SPORT FLOORS**  
 ■ Area Elastic ■ Point Elastic ■ Combi Elastic  
 Very Suitable (\*\*\* ) Suitable ( \*\* )  
 Less Suitable ( \* ) Unsuitable ( - )



# Prosport Excellent Wood Easy Reference Guide

SPORT Floorings		STANDARD	CONSTRUCTION HEIGHT		LOADING CAPACITIES AND BATTEN DISTANCES FOR VARIOUS WOOD SPECIES					
Description	System	Class	Floor System excl. Packing (mm)	Floor System + Wedge and up to 2 raiser blocks (mm)	Beech		Ash		Hevea	
					S.L. <sup>1</sup> 363 (mm)	H.L. <sup>2</sup> 311 (mm)	S.L. <sup>1</sup> 363 (mm)	H.L. <sup>2</sup> 311 (mm)	S.L. <sup>1</sup> 311 (mm)	H.L. <sup>2</sup>
<b>PRO I</b> Single batten system. Even subfloor of concrete wood or synthetics. New floors or renovations.		A4	50	-	■	■	■	■	■	
<b>PRO II</b> Single batten system. Packed over uneven concrete using leveling system. New floors or renovations		A4	64	 84-144	■	■	■	■	■	
<b>PRO II 2 layer</b> Single batten over raiser batten as 2 layer system. Packed over uneven concrete using leveling system.		A4	118	 138-198	■		■			
<b>PRO III</b> Single batten system. Packed over uneven concrete using leveling system. New floors or renovations.		A4	76	 96-156	■	■	■	■	■	
<b>PRO III - Renovation</b> Single batten over existing lower leveled batten to conform a 2 layer system. For renovations.		A4	76	Height of existing lower batten plus 76mm.	■	■	■	■	■	
<b>Clip system</b> Floating system on elastic foam. Even subfloor concrete/wood. New floors or renovations.		A3	32	-	Heavy Loading Clip Distance, c/c = 500mm					

### Note: Specification of loadings

1) Standard loading (S.L.). Point load, Q = 4 kN (Normal usage)

2) High loading (H.L.). Point load, Q = Up to 6 kN (Mobile seatings etc.)