



**InstaFloor**  
SUPPORTING YOUR WORLD

**InstaSport** *high-performance*  
**SPORTS**  
*flooringsystems*

# InstaFloor **SPORTS** flooringsystems

**P**art of the InstaGroup, InstaFloor has been producing high performance multi-purpose sports flooring since 1995. These versatile, impact energy absorbing, sub-floor systems are suitable for all indoor sports and leisure applications and, when combined with most proprietary sports surfaces, the finished floor is fully compliant with EN 14904, the current standard for indoor sports flooring.

InstaSport offers two kinds of raised sports sub-floor systems:

- Sports Cradle and Batten System - comprising special rubber crumb cradles, manufactured using recycled tyres, and timber battens. This system is particularly versatile and, being adjustable on site, is suited for use on uneven floors.
- Sports Batten - comprising a timber batten with a special profiled shock absorbing resilient layer, also manufactured using recycled rubber crumb. It is ideal for use on level floors where the tolerance is within 3.0mm over a 3.0m measured distance

These resilient, high standard, impact energy absorption systems comply with the requirements of EN 14904 as well as the strict criteria stipulated by many sports governing bodies, such as Sports England. The systems are also designed to withstand the loadings from users and equipment as defined in BS 6399: Part 1

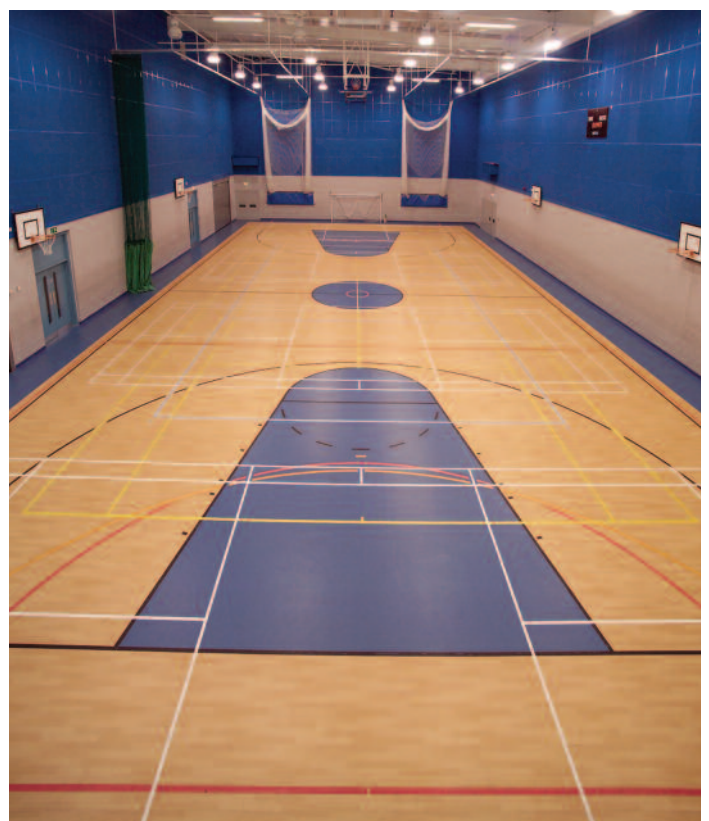
## Applications

- **New build**
- **Refurbishment**
- **All level and uneven sub-floors**
- **Sports halls and gymnasias**
- **Multi-use games and play areas**
- **Examination halls**
- **Dance and exercise studios**

InstaFloor works closely with major vinyl and hardwood flooring manufacturers and approved installers to provide clients with fully compliant sports floors backed by a comprehensive technical service.

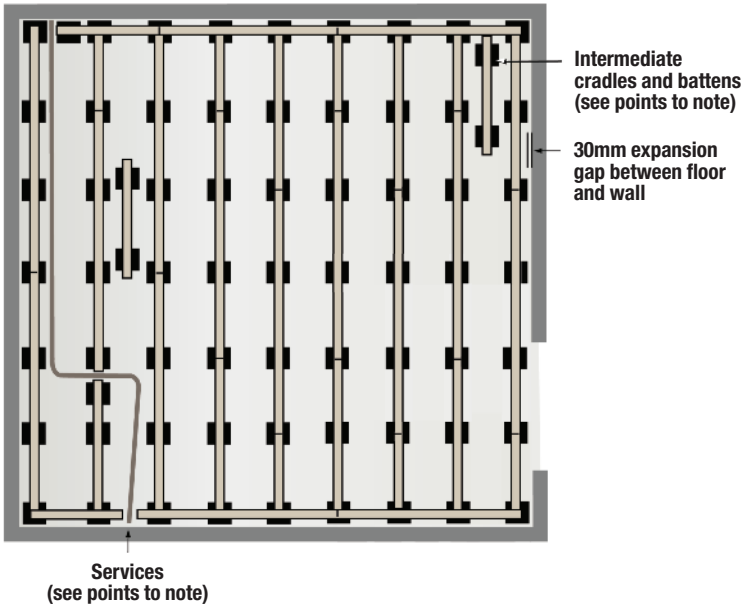
## Benefits

- **Complies with EN 14904 and BS 6399: Part 1**
- **Combined-Elastic (Type C) or Area-Elastic (Type A) floors**
- **Shock absorption helps avoid injury and fatigue**
- **Cost-effective and easy to install systems**
- **No structural sub-floor preparation**
- **Suitable for all types of structural sub-floors**
- **Adjustable on site to eliminate height variations in the structural sub-floor**
- **High performance long lasting systems**
- **Adjustable to varying finished floor heights**
- **Sports cradles have a 60 year guarantee**
- **Underfloor void for services, including heating**
- **Can include access hatches and fittings for permanent sports equipment**
- **Full technical back-up available**

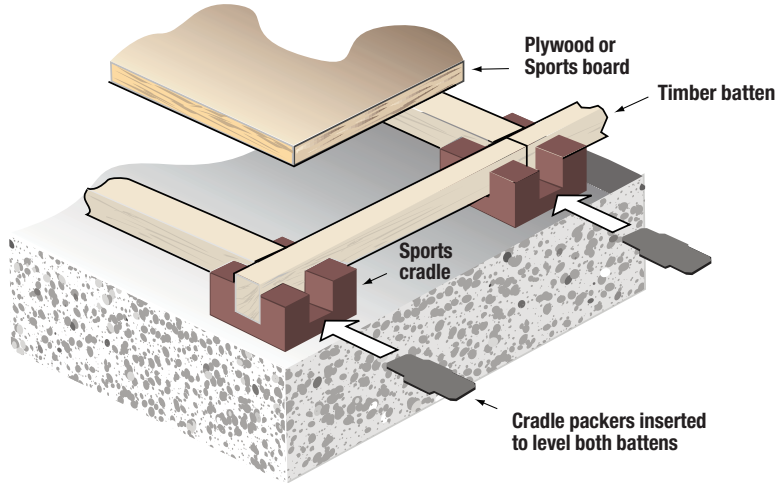


# SPORTS FLOORS SP18 & SP22 Cradle and Batten Systems

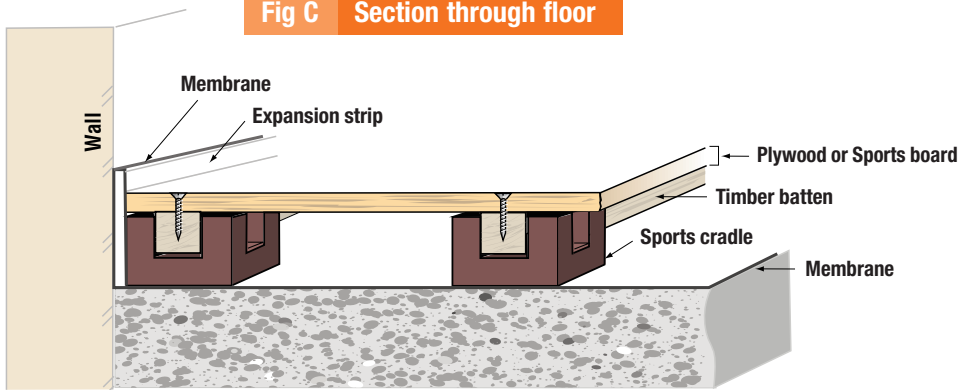
**Fig A** Plan view: Typical Cradle/Batten layout



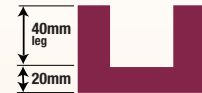
**Fig B** System detail illustration



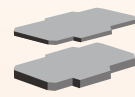
**Fig C** Section through floor



## COMPONENTS



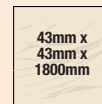
**Sports Cradles**



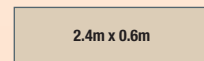
**Cradle Packers**  
2mm and 5mm



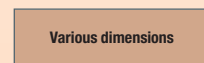
**Cradle Base Packers**



**Timber Battens**



**Plywood**  
or

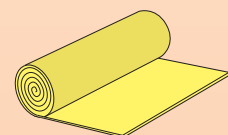


**Sports Board**



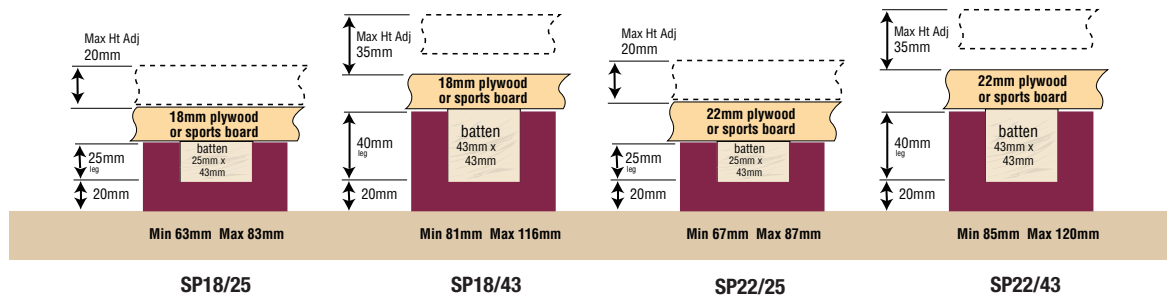
**Expansion Strip**

Plywood – Screws and Glue  
Sports Board – Porta Nails



**Thermal Insulation (optional)**  
60mm, 80mm or 100mm thick

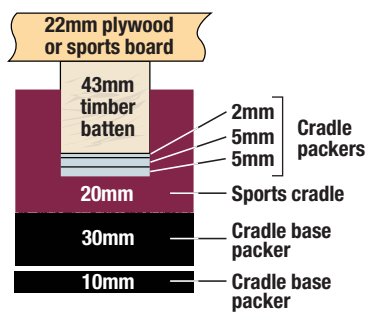
# Examples of finished floor heights achievable with the SP18 & SP22 systems



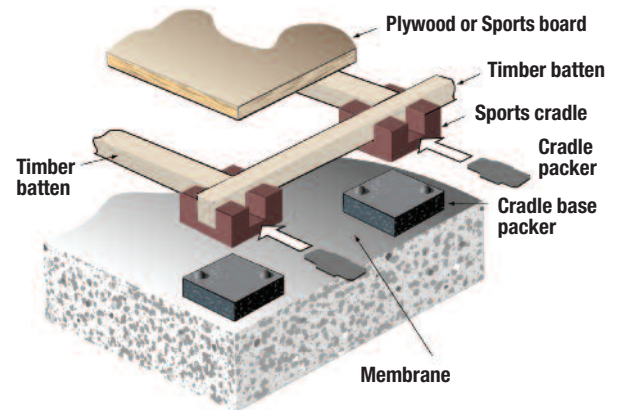
## Increased Floor Heights

When increased finished floor heights are required, to cater for specific design criteria, deep services or very uneven sub-floors, cradle packers and cradle base packers are available for rapid, cost-effective and easy height adjustment. These may be used in multiples to achieve the desired finished floor height.

### Example: 137mm finished floor heights



## Multiple Cradle Base Packer assembly



## InstaFloor Sports Floors Systems Test Results

SYSTEM	SP18/25	SP18/43	SP22/43	SP22/25	SP22/43
Cradle Spacings (mm)	400 x 300	400 x 600	600 x 600	504 x 300	504 x 600
Sports Cradle	20mm Base, 25mm Leg	20mm Base, 40mm Leg	20mm Base, 40mm Leg	20mm Base, 25mm Leg	20mm Base, 40mm Leg
Batten Size (mm)	25 x 43 x 1800	43 x 43 x 1800	43 x 43 x 1800	25 x 43 x 1800	43 x 43 x 1800
Plywood Thickness (mm)	18	18	22	n/a	n/a
Sports Board Thickness (mm)	n/a	n/a	n/a	22	22
Finished Floor Height (mm)	63 -> 83	81 -> 116	85 -> 120	67 -> 87	85 -> 120
Floor Finish	Plywood + Vinyl	Plywood + Vinyl	Plywood + Vinyl	Sports Board	Sports Board
<b>TEST RESULTS</b>					
EN 14904 Performance	C4	C4	C4	A4	A4
Shock Absorption (%)	61	64	66	56	64
Requirement of EN 14904 Type C4/A4 (%)	≥ 55 < 75	≥ 55 < 75	≥ 55 < 75	≥ 55 < 75	≥ 55 < 75
Vertical Deformation (mm)	2.5	3.0	2.8	2.4	2.8
Requirement of EN 14904 Type C4/A4 (mm)	≥ 2.3 < 5.0	≥ 2.3 < 5.0	≥ 2.3 < 5.0	≥ 2.3 < 5.0	≥ 2.3 < 5.0
Vertical Ball Behaviour (%)					
Basketball	103	92	99	97	99
Requirement of EN 14904 (%)	≥ 90	≥ 90	≥ 90	≥ 90	≥ 90
Resistance To Rolling Load	no indentation or damage				
Requirement of EN 14904 (%)	Maximum indentation shall be 0.5mm under a 300mm straight edge and no perceivable damage shall be observed after the test.				

Note: Test results achieved using the Gerflor Sport M+ Vinyl installed over a Plywood surface or a Tarkett 22mm Beech Sports board fixed direct to timber battens.

# SPORTS FLOORS SP18 & SP22 Cradle and Batten Systems

## Installation instructions

The following instructions are issued as an aid to the correct installation procedures. Individual site conditions may necessitate variances to these standard instructions. Such cases should be referred to the InstaFloor Technical Department for approval. All installation and working practices should be in accordance with relevant Codes of Practice, current British Standards and HSE Regulations applicable to the construction industry.

### SITE PREPARATION

- IF A SCREED HAS BEEN APPLIED IT MUST BE FULLY CURED BEFORE BEGINNING THE INSTALLATION OF THE CRADLE AND BATTEN SYSTEM
- BUILDING TO BE DRY AND WEATHERPROOF
- ENSURE THAT ALL MATERIALS ARE UNPACKED AND LEFT IN THE AREA TO BE LAID FOR A MINIMUM 24 HOURS PRIOR TO INSTALLATION. THIS IS TO ALLOW FOR ACCLIMATISATION TO TEMPERATURE AND HUMIDITY LEVELS WHICH SHOULD BE SET AND MAINTAINED TO MATCH FUTURE 'IN-USE' CONDITIONS
- INSTAFLOOR ADHESIVE SHOULD NOT BE SUBJECTED TO TEMPERATURES OF LESS THAN 5°C.
- FLOOR RECEIVING THE CRADLE AND BATTEN SYSTEM MUST BE
  - HARD
  - DRY
  - FREE OF ALL DEBRIS
  - REASONABLY SMOOTH – TAMPED FINISHES ARE ACCEPTABLE

### REQUIRED TOOLING

- LASER LEVELLER – FOR USE WITH CRADLE & BATTEN SYSTEMS ONLY
- CIRCULAR SAW
- JIGSAW
- HAND SAW
- PENCIL
- UTILITY KNIFE
- STRING LINE
- BATTERY DRILL
- COUNTERSINK BIT
- TAPE MEASURE

### TEST CERTIFICATION AVAILABLE

#### STEP 1 DAMP PROOF MEMBRANE (OPTIONAL)

- 1** A damp proof membrane is recommended on ground floor slabs and new concrete bases above ground level. (See points to note)

#### STEP 2 BATTEN CENTRES

- 2** Start, usually at the point furthest from the doorway (wall A), by measuring out the batten centres (Fig.1). For example, for the SP22/43 (600 x 600) system, mark out every 600mm to give the correct batten centres. Mark out the batten centres on the opposite wall (wall C) and, using a chalk string line, ping or mark between the matching marked points (Fig.2).

#### STEP 3 CRADLE CENTRES

- 3** Measure out the cradle centres along the batten centres by walls B and D. The cradle centres vary according to which batten is being used. For example, for the SP22 system with a 43mm deep batten the cradles will be at 600mm centres. Using this example, measure 600mm along both B and D perimeter chalk lines, starting from the same end (e.g. wall A) and mark or ping a chalk line between the corresponding points to create a grid (Fig.3).

#### STEP 4 CRADLE POSITIONING

- 4** Place the cradles around the perimeter on all the marked points, ensuring a 30mm gap between the wall and the cradle edge, and at each chalk line intersection (Fig.4).

#### STEP 5 FLOOR HEIGHT VARIATIONS

- 5** Using a laser levelling system, establish the highest datum point of the floor. Calculate the difference between the datum point and every cradle and write the figure, on the floor, next to each cradle (Fig.5).

#### STEP 6 HEIGHT ADJUSTMENT

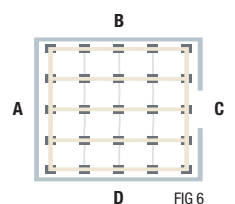
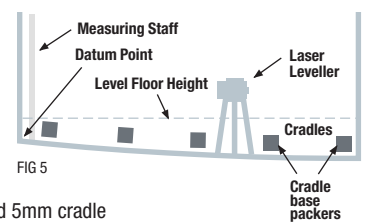
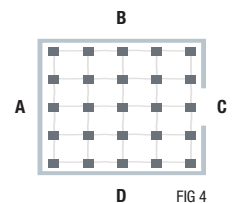
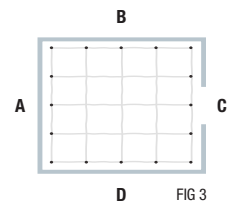
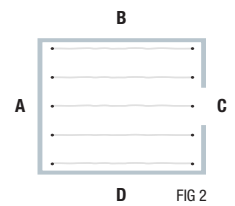
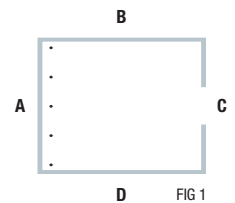
- 6** Insert the appropriate quantity and combination of 2mm and 5mm cradle packers into each cradle equal to the noted height difference, e.g. 6mm = 3 x 2mm packers; 14mm = 2 x 5mm + 2 x 2mm packers. The cradle packers should be placed in line with the direction of the battens. When packing under the join of two or three battens make sure the packer is supporting all battens. Packers can be used to a maximum of 5mm below the top of the cradle leg. Additional height can be achieved by using 10mm and 30mm cradle base packers.

#### STEP 7 BATTEN PLACEMENT

- 7** Insert the timber battens into the cradles. Start around the perimeter and then along the original marked ping lines. Timber battens should be laid in a staggered formation and all battens must join within a cradle (Fig.6).

#### STEP 8 THERMAL INSULATION (OPTIONAL)

- 8** If required, the thermal insulation should be laid between the timber battens. InstaFloor can provide 'U' values for the insulation.



# SPORTS FLOORS SP18 & SP22

## Cradle and Batten Systems

### Installation instructions Points to note

#### STEP EXPANSION STRIP

- 9** Place the expansion strip around the perimeter of the room between the wall and the cradles (Fig. 7). Expansion strip is not required when installing a system with a sports board finish.

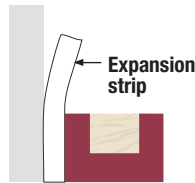


FIG 7

#### STEP A. PLYWOOD

- 10**
- Apply InstaFloor Adhesive Plus to the top of the cradle battens and lay the boards at 90° to the battens.
  - A 30mm gap around the perimeter must be maintained and the expansion strip must not be squashed.
  - As the boards are laid the Adhesive Plus should be applied to the tongue and groove edges of the boards.
  - Boards should be laid in a staggered formation ensuring joints are a minimum of 150mm apart.
  - Edges on the short side of the boards must join on a batten.
  - The boards are screwed down using countersunk wood screws as in the screw fixing pattern, Fig. G on page 9. Perimeter fixings on the long edge of the boards should not exceed 600mm. Fixing centres along the cradle battens should be at 300mm and 150mm from the long edge perimeter. Where boards join on the short edges they should be screwed down in two places both sides of the join.

#### B. SPORTS BOARD

- When installing sports boards, these are nailed directly to every timber batten using porta nails (fixing at a 45° angle into the tongue).
- Ensure that a suitable expansion gap to the perimeter is maintained. When using the Tarkett 22mm sports engineered wood board, allow an expansion gap of 1.5mm per metre of flooring width.
- If not using a Tarkett sports board then refer to the wood manufacturer for further information on the required expansion gap.

#### STEP MAKING GOOD

- 11** Once the plywood boards have been laid and the proprietary vinyl or hardwood flooring has been applied, cut away any surplus expansion strip with a sharp builder's knife. If required, skirting can now be fitted (Fig. 8).

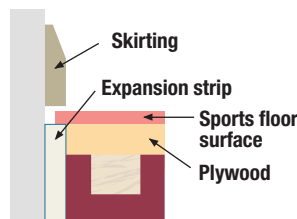


FIG 8

**FLOOR TOLERANCE (FOR SPORTS BATTEN SYSTEMS ONLY)** The sub-floor must be level to within 3mm over a 3m run. If floor levels are outside this tolerance an InstaFloor cradle and batten system must be used which has floor height levelling capabilities.

**MEMBRANE (IF REQUIRED)** A membrane, such as 1200 gauge polythene sheeting, should be installed over all ground floor slabs and new concrete bases above ground level. Joints shall be lapped a minimum of 150mm and should be taped and sealed with waterproof adhesive tape, with edges upturned to the same height as the tongue & grooved overlay boards at all perimeter walls.

**SERVICES** If there is insufficient room to run services beneath the battens, services may be accommodated by cutting the battens and passing the service through the batten. Support the cut batten, leaving 10mm-15mm clearance from the service, with additional cradles supporting the cut battens.

**Never notch the battens.** Services running at the perimeter of the room must be a minimum of 150mm from the perimeter and should not be grouped any wider than the available space between the battens.

**UNDERFLOOR HEATING** Can be used in conjunction with InstaFloor sports sub-floor systems. Consult InstaFloor Technical Department.

**INTERMEDIATE BOARD SUPPORT** When the short ends of the boards do not join on a batten, they should be supported with intermediate cradles and battens or sports battens (see fig. A). Where boards join without being tongued and grooved, such as in doorways, support the join with intermediate cradles and battens or sports battens. Fix the boards to the batten maintaining the expansion gap between the edges of the boards to avoid squeaking. Batten spacing may be adjusted to suit room sizes to minimise waste provided the maximum batten spacing is not exceeded.

**ABNORMAL LOADING** If the cradle and batten or sports batten system is to be subjected to abnormal loading, it may require the use of additional cradles or sports battens. In such cases please refer to the InstaFloor Technical Department for advice.

**SPORTS EQUIPMENT SOCKETS/ACCESS HATCHES** Due to the type of sub-floor, the use of free-standing equipment is recommended. When it is inevitable that sockets are required, these should be fixed into the concrete base with an extended sleeve to allow for the correct height of the finished sports floor surface. The equipment manufacturer/installer should also be consulted, since accurate location is critical.

Access hatches can normally be accommodated. It is essential that when boards are cut they are adequately supported with additional sports cradles and timber battens / or sports battens.

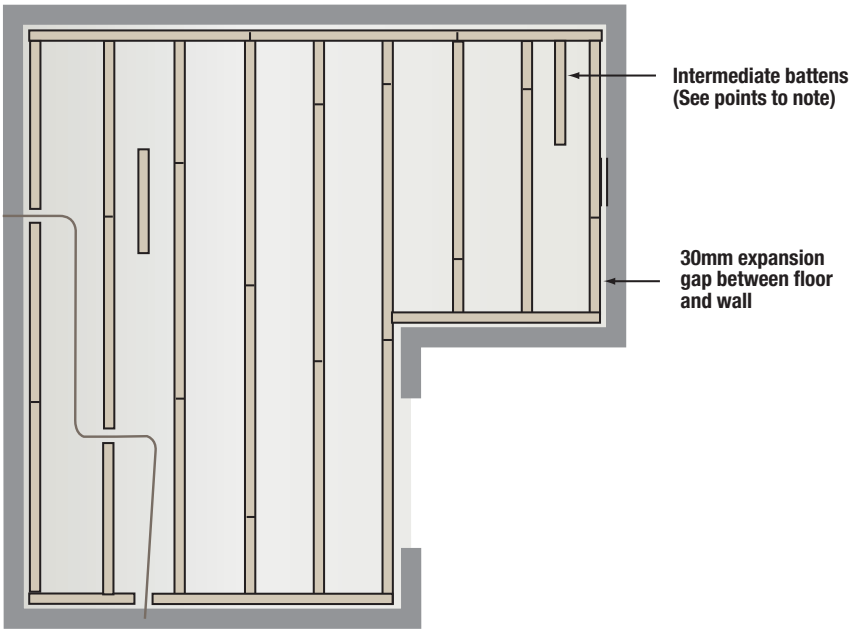
**FLOOR COVERINGS** In the case where thin flooring materials, such as Sheet Flooring, Rubber or Needle Punch Carpet, are to be installed on top of the InstaFloor plywood spruce overlay boards, a careful check should be made prior to installation of these materials, to establish if there are any raised joints which should be sanded (phenolic faced board excluded), to eliminate the possibility of the joint "grinning" through the playing surface. The use of a proprietary flexible smoothing compound is recommended. The use of cementitious levelling compounds for timber floors is **not** recommended. The flooring manufacturer should be consulted at an early stage in the project. In addition, adhesive manufacturers will also be able to provide advice.

**ADHESIVES** The installing contractor is responsible for ensuring adhesion compatibility between the overlay boards and the specified sports surface. Water dispersion adhesives are not recommended for use with the InstaFloor Sports Floor Systems.

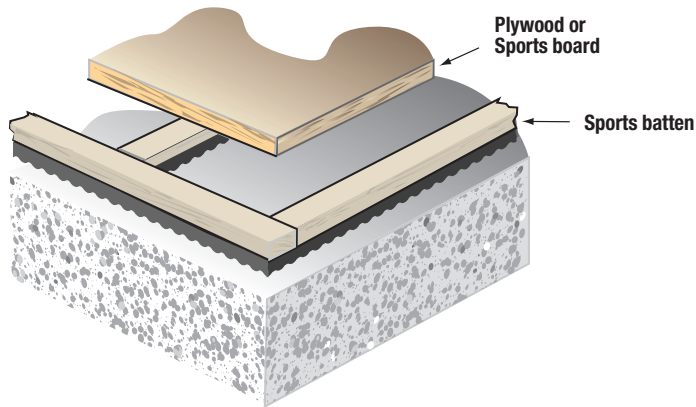
# SPORTS FLOORS SB504 & SB485

## Sports Batten Systems

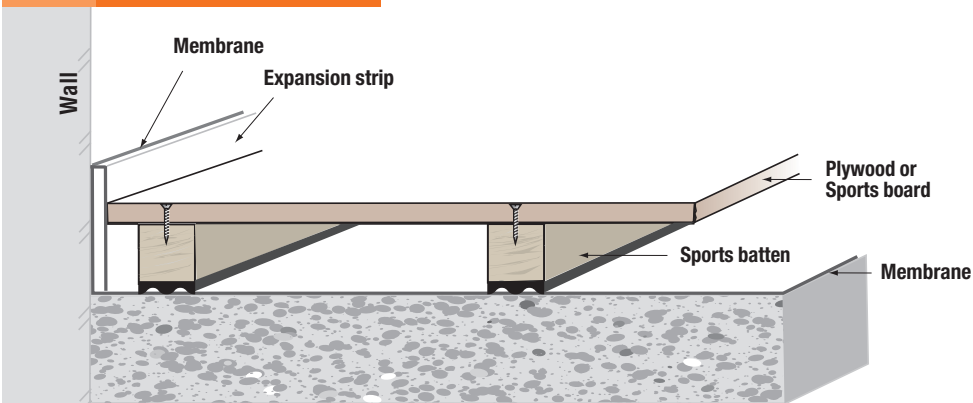
**Fig D** Plan view: Typical Batten layout



**Fig E** System detail illustration



**Fig F** Section through floor



### COMPONENTS



Sports Battens

2.4m x 0.6m

Plywood  
or

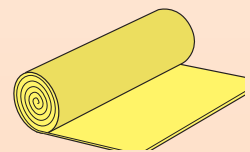
Various dimensions

Sports Board

2m x 150mm x 20mm

Expansion Strip

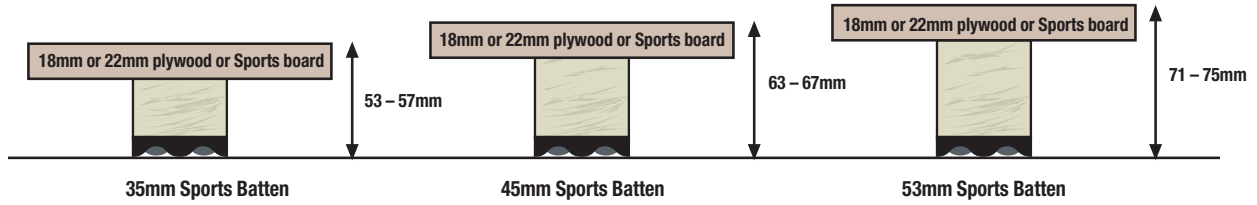
Plywood – Screws and Glue  
Sports Board – Porta Nails



Thermal Insulation (optional)  
60mm, 80mm or 100mm thick

# Sports Batten finished floor heights

## Finished floor heights



## InstaFloor Sports Batten System Test Results

SYSTEM	SB504/35	SB504/53	SB485/45
Sports Batten Size (mm)	35 x 43	53 x 43	45 x 43
Sports Batten Spacing (mm)	504	504	485
Plywood / Sports Board Thickness (mm)	18 – 22	18 – 22	19
Finished Floor Height (mm)	53 -> 57	71 -> 75	64
TEST RESULTS			
<b>EN 14904 Performance</b>	A3	A3	A4
<b>Shock Absorption (%)</b>	53	54	57
Requirement of EN 4904 Type A3 (%)	≥ 40 < 55	≥ 40 < 55	n/a
Requirement of EN 4904 Type A4 (%)	n/a	n/a	≥ 55 < 75
<b>Vertical Deformation (mm)</b>	2.5	2.0	2.5
Requirement of EN 4904 Type A3 (mm)	≥ 1.8 < 3.5	≥ 1.8 < 3.5	n/a
Requirement of EN 4904 Type A4 (mm)	n/a	n/a	≥ 2.3 < 2.5
<b>Vertical Basketball Behaviour(%)</b>	95	97	96
Requirement of EN 4904 Type A3 (%)	≥ 90	≥ 90	n/a
Requirement of EN 4904 Type A4 (%)	n/a	n/a	≥ 90

Note: Test results achieved using a Tarkett 22mm Beech Sports board or 19mm Bamboo MultiSport board.



# SPORTS FLOORS SB504 & SB485

## Installation instructions

## Sports Batten Systems

### NOTE

- For Site Preparation details and Required Tooling see page 5.
- For Points to Note on Installation Requirements, see page 6.

#### STEP DAMP PROOF MEMBRANE (OPTIONAL)

**1** A damp proof membrane is recommended on ground floor slabs and new concrete bases above ground level. (See Points to Note and Site Preparation)

#### STEP SPORTS BATTEN CENTRES

**2** Start by placing sports battens around the perimeter of the room, ensuring a 30mm gap is maintained between the wall and the perimeter acoustic batten.

Measure out the perimeter centres along the longest wall, wall B, and along the opposite wall, wall D. For example, for the SB504/35 system, mark out every 504mm to give the batten centres (Fig. 1).

#### STEP SPORTS BATTEN PLACEMENT

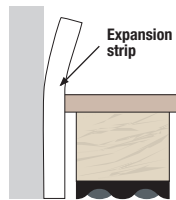
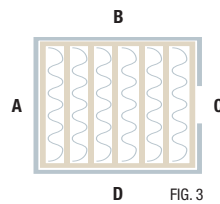
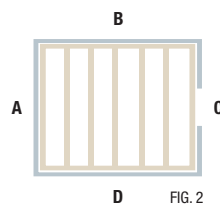
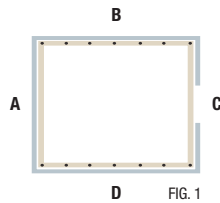
**3** Place the sports battens in a parallel formation, at the specified centres, between the corresponding marked points on walls B and D. Sports battens should be laid in a staggered formation (Fig. 2).

#### STEP THERMAL INSULATION (OPTIONAL)

**4** If required, the thermal insulation should be laid between the sports battens. (See Points to Note) (Fig. 3). InstaFloor can provide 'U' values for the insulation.

#### STEP EXPANSION STRIP

**5** A 30mm gap between the edge of the boards and the perimeter wall must be maintained. After the boards have been laid throughout the room insert the Expansion Strip into the 30mm gap. Ensure that this strip is continuous around the perimeter (Fig. 4). Expansion strip is not required when installing a system with a sports board finish.



#### STEP A. PLYWOOD

- 6**
- Apply Adhesive Plus to the top of the sports battens and lay the boards at 90° to the battens.
  - As the boards are laid the Adhesive Plus should be applied to the tongue and groove edges of the boards.
  - Boards should be laid in a staggered formation ensuring joints are a minimum of 150mm apart.
  - Edges on the short side of the boards must join on a batten.
  - The boards are screwed down using countersunk wood screws as in the screw fixing pattern, Fig. G below. Perimeter fixings on the long edge of the boards should not exceed 600mm. Fixing centres along the sports battens should be at 300mm and 150mm from the long edge perimeter. Where boards join on the short edges they should be screwed down in two places both sides of the join.

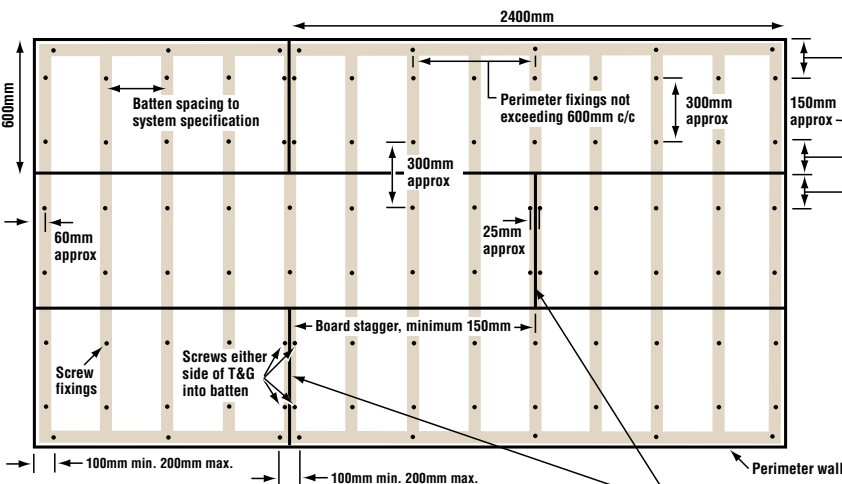
#### B. SPORTS BOARD

- When installing sports boards, these are nailed directly to every timber batten using porta nails (fixing at a 45° angle into the tongue).
- Ensure that a suitable expansion gap to the perimeter is maintained. When using the Tarkett 22mm sports engineered wood board, allow an expansion gap of 1.5mm per metre of flooring width.
- If not using a Tarkett sports board then refer to the wood manufacturer for further information on the required expansion gap.

#### STEP MAKING GOOD

- 7**
- Once the plywood boards have been laid and the proprietary vinyl or hardwood flooring has been applied, cut away any surplus expansion strip with a sharp builder's knife. If required, skirting can now be fitted

Fig G Screw fixing pattern of Overlay Boards to Battens



We reserve the right to change the specification without prior notice.

Overlay Boards with staggered joints. Tongue & Groove of boards glued and boards glued to timber battens



1

## Projects

1. English Institute of Sport, Sheffield – Gerflor Taraflex Combisport
2. South Yorkshire Fire Brigade Training Centre, Sheffield - Sports Surfaces UK
3. National Badminton Academy, Scotstoun, Glasgow – Gerflor Taraflex Combisport
4. RAF Odiham, Hampshire – Tarkett Sports Beech
5. The German School, Petersham, Surrey – Tarkett Combi Sport
6. The Acorn Centre, Acklam Grange near Middlesbrough – Gerflor Taraflex Combisport



2



3



5



4



6

# InstaFloor

SUPPORTING YOUR WORLD

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