

# Structure and Instruction of Sports Floors Installation

## FOREWORD

Scientific design and installation of sports floors is an important issue for venue builders and equipment service providers. It is necessary to ensure the aesthetics, practicability and durability of venues and buildings as well as the requirements of skid resistance, elasticity, wear resistance and environmental protection.

For more than a decade, NB has been using advanced manufacturing technology to build an important part of the stadium “*sports floors*”. NB not only provides excellent wooden floor and keel structure, but also provides professional installation, maintenance and after-sales service which is popular with athletes, project contractors and venue operators.

NB sports floor is a special floor suitable for sports in stadiums whose material is elastic hard wood (maple, birch, hevea, oak).

NB sports floor is generally used in basketball, volleyball, badminton, futsal, squash, stage, theatre, table tennis, judo, martial arts, gymnastics and other sports venues.

The structure of NB sports floor is divided from bottom to top: sub-floor - moisture-proof layer - elastic rubber cushion - keel structure - surface floor - topcoat.

## INSTALLATION PROCEDURE

### *1. Sub-floor Treatment*

Sub-floor treatment should be carried out before installation of sports floor. Clean up debris and dust of the surface floor to prepare for the next process. Sub-floor treatment can be used by broom, spade and other tools to remove surface debris. Professional grinders are used to smooth the rough and uneven parts of sub-floor. Dust produced in the sub-floor treatment should be cleaned by vacuum cleaner which can not be washed with water, because the operation with water will seriously affect the anti-corrosion and moisture-proof performance of the floor.

### *2. Moisture-proof treatment*

The quality of moisture-proof treatment technology is directly related to the service life of sports floors. Different moisture-proof treatments should be used for different sub-floor. If the sub-floor is the ground floor, SBS, non-woven fabric or APP polymer waterproof material can be used for the moisture-proof layer. If the sub-floor is the second or above floor, the moisture-proof layer can be painted with anti-corrosion oil on the surface of the sub-floor. Different moisture-proof technologies should be selected to deal with different sub-floor which not only ensures the moisture-proof effect, but also reduces the cost of construction.

### ***3. Snapping the line***

Snapping the line according to dimension of construction drawing of wood floor is a necessary procedure before keel installation.

The main keel axis lines should be ejected horizontally according to the distance between the keels, and the dimension line of the auxiliary keel installation should be ejected vertically. There is a certain gap between the actual size and the drawing size. The size lines should be arranged according to the actual equal distance to avoid errors.

### ***4. Making level***

Leveling is the most basic work of wood floor paving. The success or failure of leveling directly determines the overall leveling of sports wood floor. The larger the pavement area, the more complicated the leveling work is. Because the size of keel is quite different, the scientific method of making level is to lay the keel in place according to the snapping line and use the wedge to raise the lower part and remove the higher part of the sub-floor which can achieve twice the result with half the effort.

### ***5. Cushion Installation***

Cushion plays a role in increasing floor elasticity and reducing sports injuries of athletes in sports floors. The installation of cushion directly affects the elasticity of floor. Installation of NB cushion begins with material selection. High quality, good elasticity and anti-aging rubber products should be selected. In addition, the cutting size of cushion should not be less than the width of keel. When install the cushions, nail them on the bottoms of the keels with equal distance. After the installation, just turn the keel over.

### ***6. Installation of wooden keel***

Installation of wooden keel should be carried out in the order of first up and then down, first main keel, then accessory keel. The arrived materials should be selected before the installation of wooden keel. Material dimensions with large errors, keels with bending deformation and leftover bits and pieces should be eliminated. The keel is located above moisture barrier to protect it from moisture. The distance between the keels should be 300mm around, and in case there is plywood board between the keels and surface floor, the distance could be 400mm.

### ***7. Plywood Floor Installation***

Plywood floor plays an important role in increasing the integrity and firmness of sports floor. NB plywood floor will be preserved before installation. The usual anticorrosive technology is to apply anticorrosive oil on the surface of wood keel to achieve anti-corrosive effect. In order to improve the integrity, the plywood floor is usually laid obliquely in the direction of 45°C. When the plywood floor is paved, attention should be paid to the stubbles which should be arranged at the keel as far as

possible. If the stubble can not be joined at the keel, the size should be measured, and then the handsaw should be used to cut 45° in order to meet the effect of stubble joining. When the plywood floor is paved, attention should also be paid to the seams to ensure the quality of the pavement.

### ***8. Surface Floor Installation***

Installation of surface floor is the key link in the pavement of sports floor. whose paving technology is directly related to the success or failure of sports floor paving. NB surface floor is processed systematically before installation, including boiling, desulfurization, dehydration, insect prevention and so on. Every step should not be neglected. Clean floors without dehydration will shrink and deform over time due to excessive moisture content. The clean floor without insect-proof treatment will be damaged by the erosion of insects and reduce its strength. When athletes compete and train, the erosion and damage of the floor can easily cause sports injury. Surface floor should be laid in a straight direction (usually in the direction of the entrance).

When the surface floor is paved, we should pay attention to the straight seam as far as possible, and at the same time we should pay attention not to leave vents to improve the overall strength.

### ***9. Floor polishing and painting***

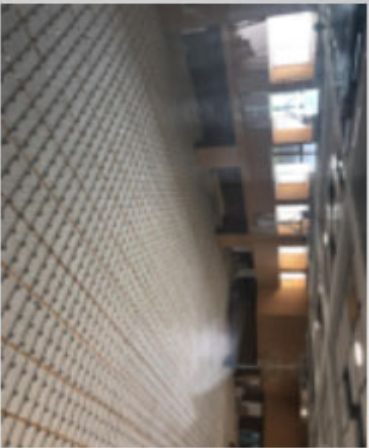
Painting is the last step in the paving of sports floor. If the process is properly handled, it will be the icing on the cake. On the contrary, the effect of finished products will be greatly affected. Sports floors will be polished before they are painted.

Specialized wood floor paint should be selected when painting. Paint should be fast-drying, anti-skid, wear-resistant, environmentally friendly, non-reflective and other characteristics. Floor paint usually brushes for three or four times or even five or six times. After the floor is painted, the site line should be drawn according to different sites. The venue line implements the latest venue standards or unconventional standards agreed by both sides. The paints used in site drawing should be in the same series as floor paints in order to ensure a unified visual effect and maintenance procedures.

### ***10. Ventilation and Noise Reduction Settings***

In order to meet the requirements of durability and sport comfort, ventilation and noise reduction devices will be installed in the last step of the pavement of the NB sports floor. Ventilation devices are usually installed after completion of floor construction. The general practice is to drill ventilation holes on the clean floor at the edge of the site. A grate can be installed on the hole to prevent debris from entering the hole. Noise reduction device is used to reduce the noise of venues. Stone wool can be filled in the middle of keel before the installation of plywood floor. The method is relatively simple and the effect is very good.

# NB Fixed Floor System Installation Steps



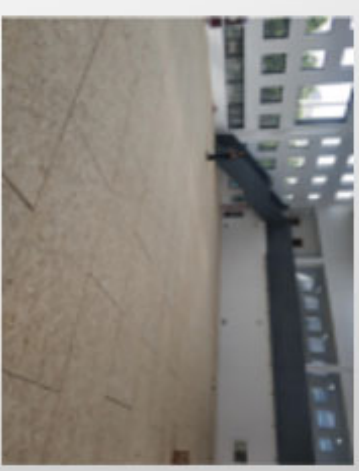
Keel/batten line positioning.  
Check the flatness of the ground  
and make the marks



Nail the cushions on the keels



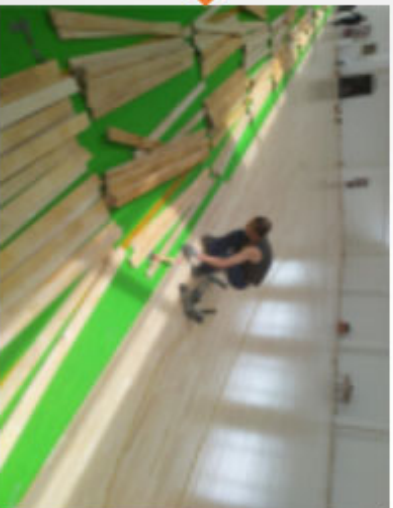
Level out and pave the keel



Install the plywood if any



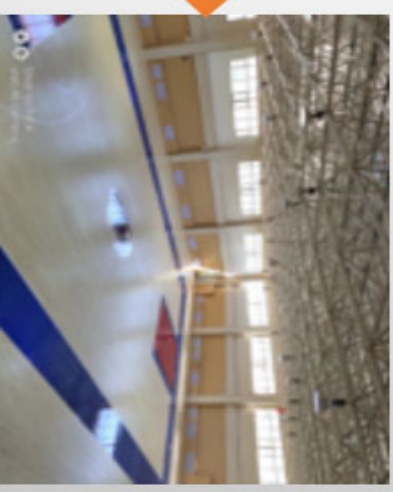
Pave the non-woven fabrics  
to insulate sound & prevent  
damp



Install the top solid wood floor



Load the convergent  
wooden line



paint the lines and marks

## DEMONSTRATION OF INSTALLATION STEPS

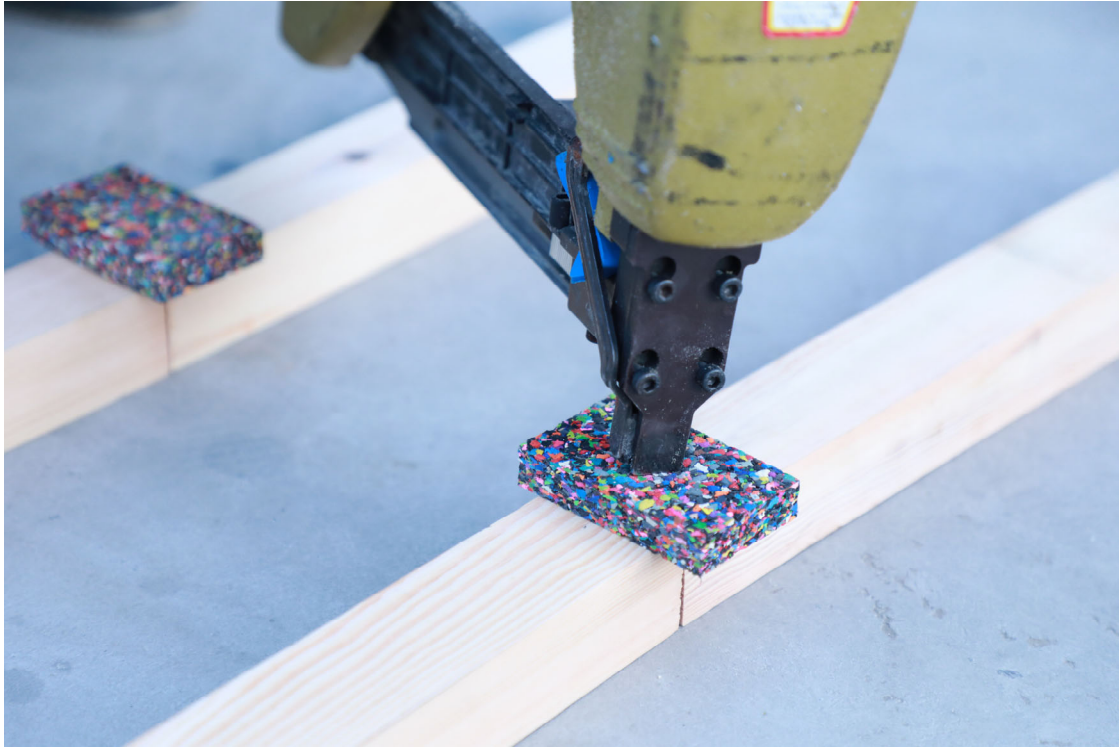
### Connect the Keels



### Place Cushions



## Nail Cushions



## Nail Cushions



## Install plywood underboarding



## Lay the moisture sealer



## Pave the surface floor



## Nail the surface floor

