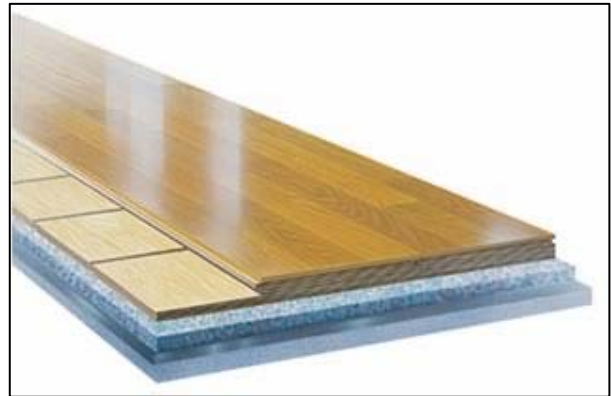


## 1. Model Helsinki 10

Model Helsinki is a so-called elastic construction. It must be installed on an even sub-floor. The slab should be level according to DIN 18032, part II and DIN 18202:1997-04, figure 3 (compare with "PART 1 – GENERAL" 1.1 Tolerances).

The construction height of Helsinki 10 is just 39.6mm and therefore a perfect choice for refurbishment and renovations. Model Helsinki provides both a high shock absorption greater than 62% for the athlete's safety and a ball rebound of 98%.



Model Helsinki 10 features a HARO Sports hardwood floorings with 12.6 mm thickness consisting of a premium choice hardwood top layer supported by a top-quality plywood core layer. The 3.6mm hardwood top layer receives a factory applied PERMADUR® finish for superior performance and surface protection. Helsinki 10 fully meets the requirements of German DIN standard 18032-2 and is officially approved by the international Basketball Association (FIBA).

## 2. Installations



Picture: Centro Sportivo Comunale; Casteggio, Italy

Belgium	De Haan	Zeelyceum de Haan
England	Epsom, South London	Blenheim School
England	East Ham, London	New East Ham Leisure Centre
England	Romford, Essex	Marshal Park School
England	Talacre	Talacre Community centre
Italy	Casteggio	Centro Sportivo Comunale
Italy	Niederdorf	Gymnastikraum Niederdorf
Japan	Hikari City	Multi-Purpose Welfare Center
Lebanon	Jounieh	College Central Des Moines Libanais
Netherlands	Steenbergen	Nieuwbouw Sportcentrum Dinami
Norway	Bergen	Nykronborg skole
Rumania	Bukarest	Grand Hotel Bukarest
Spain	Madrid	Urban Fitness
Spain	Las Palmas de Gran Canaria	Pabellon Polideportivo Garcia San
South Korea	Seoul	Korea Timber Project
Switzerland	Grand Saconnex	Complexe Scolaire
Switzerland	Lausanne	Salle onmisport de la Vallee de la Jeunesse
Switzerland	Perly-Certoux	Salle polyvalente
Switzerland	Zürich	Sportanlage Zürich-Fronwald

U.S.A.	Midland, MI	Hang Time Hoops
U.S.A.	Anaheim, CA	American Sports Center
U.S.A.	Constantine, MI	St. Constantine High School
U.S.A.	Ada, MI	Alticor – Wellness Facility
U.S.A.	Grand Rapids, MI	Forest Hills Eastern High School
U.S.A.	Anaheim, CA	American Sports Centre
U.S.A.	Belleville, IL	Belleville Sports Centre

### **3. Specifications for HARO Sports floor Helsinki 10**

#### **PART 1 - GENERAL**

##### 1.01 DESCRIPTION

A. Related work specified under other sections.

##### B. CONCRETE SUBFLOORS

a) Depression: Slab depression is minimum 40mm.

b) Tolerances: The general contractor shall furnish and install the concrete subfloor depressing the slab sufficiently to accommodate the floor system. The slab should be level within following tolerances according to DIN 18032, part II and DIN 18202:1997-04, figure 3:

- 3mm (1/8") in a radius of 1 meter (3' 3")
- 9mm (3/8") in a radius of 4 meter (13' 1")
- 12mm (1/2") in a radius of 10 meter (39' 4")
- 15mm (5/8") in a radius of 15 meter (49' 2")

For USA: Concrete tolerance 1/8" in radius of 10'

Differing spots shall be ground level, and low spots filled in with approved levelling compound by the general contractor.

- c) Waterproof: On or below grade concrete sub-floors are generally acceptable if an effective moisture barrier is installed. Concrete subfloors on or below grade shall be adequately waterproofed beneath the slab and at the perimeter walls and on earth side of below grade walls by general contractor using suitable type membrane.
- d) Moisture content of sub-floor: Concrete subfloors must not contain more than 2.5% moisture content (appropriate test method). Moisture content of wooden subfloors should be between 6-10%.
- e) The subfloor must be clean.

##### 1.02 QUALITY ASSURANCE

#### **A. Floor System Manufacturer Qualifications**

1. Manufacturer shall be an established firm experienced in field and have been in business under the same corporate name for a minimum of ten (10) years.
2. Manufacturer must meet qualifications of ISO 9001 and 14001.
3. Manufacturer shall submit a list of projects where the specified flooring has been installed.
4. Offered sports floors must be FIBA approved.
5. Sportsfloor should be under permanent supervision of RAL and be marked with the RAL certificate RAL-GZ 942.

**B. Performance Qualifications of Flooring System**

1. Floor system must exceed the requirements of DIN V 18032-2 Part II, as set out below:
  - a) Shock Absorption: shall be minimum of 53%
  - b) Ball Return: shall be a minimum of 90%
  - c) Deflection: shall be minimum of 2.3mm
  - d) Area of Deflection: shall be maximum of 15%
  - e) Friction: Range 0.4 - 0.6 per DIN Test Method
  - f) Rolling Load: 1500 Newton Load without damage

1.03 BIDDER MUST PROVIDE EVIDENCE OF ANY DEVIATION from these specifications including detailed drawings and statements itemising, where products deviate from or exceed these specifications. This data shall be provided with bid.

1.04 SUBMITTALS

- a) The Bidder must include the attached Supplemental Pricing Sheet containing detailed costs in an itemised format. Final Purchase Price shall include all freight to Site, Taxes and Duty. It is intended that a final price be submitted.
- b) The Bidder must describe any potential problems which may impact the delivery date.
- c) Manufacturer shall provide written evidence of previous installations of this floor currently in use. Installation shall have taken place within the past ten (10) years. This information shall be submitted with this bid. The Bidder must include a minimum of five (5) references for comparable systems and installation efforts successfully performed by the Bidder within the last 18 months.
- d) Each Bidder is required to provide the following information in the amounts requested. Bidders who fail to provide any of the submittals requested will not be given consideration.

Submit three (3) copies of the Bid Form/Quotation Sheet.

Submit three (3) copies of manufacturer's descriptive literature and manufacturer's fabrication specifications.

Submit three (3) copies of manufacturer's warranty if different from the Vendor's Warranty as required in the Terms and Conditions.

#### 1.05 DELIVERY, STORAGE AND HANDLING

##### a) Delivery of Materials

Materials shall not be delivered, stored or installed until all painting and plastering work has been completed, and all overhead mechanical work like lighting, backstops, scoreboards are installed. A room temperature of 18-22 degrees Celsius (64 to 72 degrees Fahrenheit) and a relative humidity of 45-55 % are to be maintained.

##### b) Materials shall not be stored at the installation location if the moisture content of the concrete slab differs from paragraph 1.o.1.d. „Moisture content of sub-floor“.

#### 1.06 JOB SITE CONDITIONS

Before installing a floor, inspect the job site thoroughly. Carefully inspect the outside surroundings for improper drainage and predictable or obvious sources of moisture. Be sure that, as a minimum, any concrete subfloor is at least 50-60 days old before installing a wood floor over it and the requirements of paragraph 1.01 B „CONCRETE SUBFLOORS“ are met.

#### 1.07 GUARANTEE

Hamberger Industries GmbH, of Rosenheim, Germany, warrants the material to be free from manufacturing defects for a period of 2 years.

The Warranty does not cover problems caused in whole or in part by accident, circumstances beyond control, neglect, negligence, ordinary wear and tear, abuse, use for which the material is not designed, faulty construction of the building, settlement of the building walls, failure of other contractors to adhere to specifications, separation of the concrete slab, mechanical failure, excessive dryness, or excessive moisture from humidity, spillage, migration through the slab or walls, or any other source (the excluded conditions).

This warranty is in lieu of all other warranties whether oral, written, expressed, implied or statutory, including but not limiting any warranty of merchantability or fitness for a particular purpose, and of any other obligation on the part of Hamberger Industries GmbH.

Any and all representations, promises, warranties, or statement by the installer or by any other party that differ in any manner from the terms of this written warranty shall be at no force or effect.

## Part 2 Products

### 2.01 MATERIALS

#### A. Moisture barrier

- a) 6-mil polyethylene or
- b) PVC-Foil, 0,5 mm or
- c) Bituminous coating V6oS4, 4mm thick

#### B. HARO Sports Floor Model Helsinki 10

HARO Resilient underlayment,  
HARO Load Distribution subfloor  
HARO Hardwood floor

## Assembly and construction

### 1.1 ELASTIC CONSTRUCTION

- **Spacing/Support strips**  
100 mm x 15 mm (19/32" x 3 15/16") Spacing strips placed along the perimeter of the floor with a distance of 30mm to the wall.  
Dimensions: 15 x 100 mm
- **Resilient layer**  
15 mm foam underlayment, density 100kg/m<sup>2</sup>. Installed staggered over the entire floor.
- **Load distribution panels**  
Special plywood strips BFU 100, acc. to DIN 68705 3000 x 181 x 12 mm (9'-10" x 8 1/4" x 1/2") cover floor with factory prefabricated plywood layer, leaving a 15 mm gap at all solid protrusions and walls.
- **Polyethylene foil**  
To be placed on top of the load distribution panels  
Thickness: 0.03mm
- **HARO Hardwood Flooring**  
Fabrication shall consist of a construction with  
9 mm plywood BFU 100, acc. to DIN 68705,  
part 3 and 3.6 mm wear layer, kiln dried, tongue  
and groove made of plywood. The plywood should be a  
7 ply northern birch plywood, using exterior grade  
(water resistant) glue. All knots and voids will be filled and  
sanded. The finished flooring shall be installed with no expansion  
spaces between the panels, giving a clean smooth appearance.  
There should not either be joints or expansion  
spaces between the lamellas. The floor should  
be factory finished with a UV cured multi layer high-grade  
mineral varnish (Polyurethane). The hardwood floor is stapled  
onto the load distribution panel. The expansion gap between  
the hardwood floor and the wall should not be more than 15mm.

Type of wood: \_\_\_\_\_  
Construction height: 39.6 mm

## 1.2 RIGID CONSTRUCTION

Rigid construction in the equipment and adjoining rooms. Bituminated soft-fibre sheets, 15 mm, will be used instead of elastic layer, otherwise (see above)  
Construction height: 39.6 mm

## 2. ADDITIONAL MATERIAL

### 2.1 BASE BOARDS

Base boards with ventilation slits at the front should be placed along the perimeter and cover the 15mm expansion gap between the hardwood floor and the wall. The base boards have an integrated rubber lip on the bottom as protection against cleaning water entering the sub-construction.

Wood-type: \_\_\_\_\_

### 2.2 FLOOR PLATES

Floor plates with lid, consisting of round metal frame and lid with solid-wood-edition. The lid features an all-round sealing and is locked with suction lifter. The lid is mounted flush with the hardwood flooring.

_____	Clear opening 110 mm
_____	Clear opening 160 mm
_____	Clear opening 200 mm
_____	Clear opening 285 mm
_____	Clear opening 335 mm

## 3. SANDING AND FINISHING

Wear coating on finished flooring shall be factory applied with a UV cured multi layer high-grade mineral varnish (Polyurethane). Game lines will be painted on top of the finished flooring with two-component urethane paint which requires no finish over the top. Paint must be HARO game line paint.

## Part 3-Execution

### 3.01 Inspection

- A. Inspect concrete subfloors for proper tolerances and dryness, and report any discrepancies to the general contractor in writing.
- B. All work required to put the concrete subfloors in acceptable condition shall be the responsibility of the general contractor.
- C. Subfloor shall be swept clean by the general contractor prior to flooring installers arriving at the jobsite

### 3.02 Installation

- A. Follow all manufacturers installation instructions carefully.
- B. Install moisture barrier over concrete slab per manufacturers instructions.
- C. Install elastic layer over the entire floor. Solid block at walls and protrusions, and at bleachers/seatings in their stacked positions. Staggered end joints.
- D. Cover floor with factory prefabricated plywood layer, leaving a 39 mm space between the panels.
- E. Lay 3 mil poly film over load distribution strips.
- F. Staple finish flooring to subfloor with 10 x 38 mm staples.
- G. Paint game lines as per architect's plans.
- H. Install perimeter base as per manufacturers requirements.
- I. Clean up jobsite and put all waste in general contractor's dumpster.

### 3.0.3 Maintenance

#### 1. BASIC CLEANING

Basic cleaning is carried out with our special Wax Remover, using a floor-care machine with a very low water factor. After basic cleaning the floor plates must be opened in order to allow mop-water which may have seeped in to evaporate.

#### 2. GENERAL CARE

After every basic cleaning, the complete sports floor may be treated with Parquet Gloss.

#### 3. ROUTINE CLEANING

After every day of use, the sports floor should be cleaned by damp mopping. This is necessary for hygienic reasons and to remove dust, hair, light dirt etc. from the surface.

Intermediate care should be carried out once or twice a week, depending on the usage of the hall.

#### 4. HARO BASE BOARDS WITH VENTILATION SLITS

Ventilation slits must be open permanently to provide proper ventilation of the sub-floor.

Chewing gum, cigarette ends, paper etc. should be removed from time to time, and dust and dirt should be vacuumed away.

### **PLEASE NOTE!!!**

Wood is a natural product. HARO Hardwood Sports Floor must **NOT** be flooded with water, since this may cause a swelling of the floor and thus damage the floor. It is therefore essential to be careful when cleaning and maintaining the floor and to economise with water and water-based products.