

HARO SPORTS FLOOR  
C.S.I. GUIDE SPECIFICATION  
Helsinki-Gymnasium Floor System  
10/2010

SECTION 09 64 66

WOOD ATHLETIC FLOORING

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes: Wood athletic flooring including finish, elastic layer underlayment with Nike Grind incorporated, painted lines and vented base as indicated.

1.02 RELATED DOCUMENTS

- A. The provisions of the General Conditions, Supplementary Conditions, and the Sections included under Division 1, General Requirements, are included as a part of this Section.
- B. Related work performed by others:
  - 1. Concrete Subfloors
    - a General Contractor to furnish concrete subfloor depressed 1-1/4 inch to accommodate the wood athletic flooring.
    - b Concrete slabs shall be damp proofed directly from beneath with 1/8 inch pre-molded vaporproofing membrane to adequately waterproof beneath and at perimeter of the slab and on the earth side of below grade walls. Install directly over tamped fill beneath concrete slab with no fill over the membrane. All joints lapped and sealed and turned up at perimeter edges a minimum of 6 inches.
    - c Concrete to be steel troweled and finished smooth to a tolerance of 1/8 inch in 10 feet. High spots to be ground level and low spots filled by the GC with approved leveling compound to the approval of the flooring contractor.
  - 2. Expansion joint cover assemblies and door thresholds to be furnished and installed by others.
  - 3. Cover plates or floor boxes to be furnished and installed by others.
  - 4. Athletic equipment, game inserts, floor sleeves, cover plates, anchors to be furnished and installed by others.
- C. Refer to Section \_\_\_\_\_ for Alternates that may affect the Work of this Section.

1.03 SYSTEM DESCRIPTION

A. Design Requirements

1. Complete floor assembly must be certified to pass all six DIN standards for Athletic Flooring as stated in DIN 18032, part 2, 2001. Official certification must indicate meeting or exceeding the following six DIN standards for wood sports floors:
  - 1) Shock Absorption: Minimum 53% Haro actual: 54%
  - 2) Standard Deformation: Minimum 3/32 inch Haro actual: 3/32"
  - 3) Deformation Control: 15% or less Haro actual: 9 %
  - 4) Ball Rebound: Minimum 90% Haro actual: 99%
  - 5) Coefficient of friction: Within 0.4 to 0.6 meter Haro actual: 0.46
  - 6) Rolling Load Test: Must pass Haro actual: Pass
2. Partial DIN compliance or compliance with less than all six criteria established by DIN for wood athletic floors will not be accepted. ( i.e.: DIN Certco, DIN Compliant, DIN rated, DIN Tested, etc.)
3. Floor surfaces shall be provided to conform to the Americans with Disabilities Act Accessibility Guidelines (ADAAG)
4. Provide game lines and markings complying with requirements by the following rule agency.

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SELECT ONLY ONE OF THE FOLLOWING RULE AGENCIES:  
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- a NFSHSA-National Federation of State High School Association
- b NCAA-National Collegiate Athletic Association
- c FIBA-Federation International of Basketball
- d NBA-National Basketball Association

1.04 REFERENCES

- A. DIN International performance standards: DIN 18032, part 2, 2001

1.05 SUBMITTALS

- A. Product Data: Manufacturer's detailed technical product data and installation instructions for wood athletic flooring. Include instructions for handling, storage, installation and maintenance. Provide dimensions of individual components and system profiles.
- B. Samples for Verification: For wood flooring system, game line and marker paint, finish, and accessories required; of same thickness and material indicated for the work

- C. Certifications:
  - 1. Formal certification of complete compliance with DIN 18032, part 2, 2001
  - 2. ISO 9001 and ISO 14001 Certification.
  - 3. Manufactures certification that the entire floor system, including all hardwood and subfloor plywood is supplied directly by the specified manufacture.
- D. LEED Submittals: VOC content of surface finish.
- E. Closeout Submittals
  - 1. Maintenance Data: Manufacturer's recommended maintenance procedures.
  - 2. Manufacture's warranty indicating 5 years on materials.

#### 1.06 QUALITY ASSURANCE

- A. Manufacture:
  - 1. Manufacture shall be a firm specializing in the fabrication of the products specified and have provided this type of system for more than 10 years.
  - 2. ISO Certification: Manufacturer of athletic flooring and subfloor components must be ISO 9001 and ISO 14001 Certified to assure quality control of materials provided.
- B. Resource Management:
  - 1. Manufacturer of flooring and subfloor components to be ISO 14001 Certified.
  - 2. Manufacture of flooring and subfloor components to be accredited by the FSC-Forest Stewardship Council.
  - 3. Wood: Provide hardwood top layer no thicker than the overall wear layer..

#### 1.07 DELIVERY, STORAGE, AND HANDLING

- A. Protect wood flooring from exposure to moisture in shipment, storage, and handling. Deliver in unopened cartons and store in a dry place with adequate air circulation. Do not deliver material to building until concrete, plaster, masonry, ceramic tile, and other wet work is complete and cured to a condition of equilibrium and temperature and humidity are maintained at or near occupancy levels. The building must be enclosed and watertight.
- B. Room temperature of at least 55 to 80 degrees Fahrenheit and relative humidity of 35 to 50% are to be maintained.
- C. The product selected shall require no acclimatization time. Flooring shall not require bundles to be broken apart within the work space to acclimate to environmental conditions.

#### 1.08 PROJECT CONDITIONS

- A. Concrete Slab Depression: Maximum of 1-5/8 inches.
- B. Membrane waterproofing and dampproofing: 1/8 inch pre-molded vaporproofing membrane to be placed directly against bottom surface of concrete slab and at perimeter edges of slab and on earth side of below grade walls.
- C. Concrete surface: Flat to within 1/8 inch in radius of 10 feet and troweled smooth
- D. Concrete slab to be structural concrete minimum 3000 psi compressive strength.

- Light weight concrete is not permitted.
- E. Concrete to be cured and dry. Materials shall not be installed if the moisture content of the slab vapor transmissions exceeds 5.0 pounds per 1000 square feet per RMA-calcium chloride test procedure.
  - F. Subfloor to be free from foreign material and broom clean.
  - G. Areas to be free from other trades, scaffolding, and equipment of other contractors. All overhead mechanical work, lighting, backstops, scoreboards, etc are to be installed.

#### 1.09 WARRANTY

- A. Provide a written warranty in compliance with Section \_\_\_\_\_.
- B. Manufacturer's warranty against material defects for a period of 5 years.
- C. The surface finish shall be warranted against requiring screening and/or recoating at the end of five years of use. Systems that require or recommend annual screening and recoating will not be approved.

### PART 2 PRODUCTS

#### 2.01 MANUFACTURERS

- A. This wood athletic flooring specification is based on products manufactured by Haro Sports Floors.
- B. The approval of other manufactures names and products do not relieve the contractor from furnishing products which comply with all of the detailed requirements of these specifications.
- C. Manufacturer's products shall be standard cataloged systems. Manufacturer's published literature must clearly show that the products being furnished are in compliance with all the details of these specifications.

#### 2.02 ATHLETIC FLOORING

- A. Helsinki 10 TOP engineered wood athletic floor manufactured by Haro Sports Floors.
  - 1. Hardwood athletic floor for competition athletic use.
  - 2. Floating athletic floor without any requirement for anchorage or attachment to concrete subfloor. No channels, clips or anchors required to control the expansion, movement or performance of the floor. No fasteners penetrating the vapor barrier on top of the concrete slab.
  - 3. Engineered construction with a minimum of 14 ply construction to provide dimensional stability and eliminate expansion gap requirements on the hardwood surface of the floor. Expansion gaps only allowed at the perimeter of the floor.

2.03 MATERIALS

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SELECT ONE OF THE FOLLOWING DEPENDING ON THE SPECIES AND GRADE  
OF HARDWOOD DESIRED.  
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- A. Hardwood top surface:
  - 1. Canadian Northern Hard Maple
  - 2. Grade: First
  
- A. Hardwood top surface:
  - 1. Canadian Northern Hard Maple
  - 2. Grade: Seconds and better
  
- A. Hardwood top surface:
  - 1. Canadian Northern Hard Maple
  - 2. Grade: Thirds
  
- A. Hardwood top surface:
  - 1. Ash
  - 2. Grade: First
  
- A. Hardwood top surface:
  - 1. Oak
  - 2. Grade: Select and better
  
- A. Hardwood top surface:
  - 1. Beech
  - 2. Grade First
  
- B. Top modular panels
  - 1. 1/2 inch thick engineered panels, minimum 7'-0" long. Factory fabricated with hardwood playing surface over high-quality, kiln dried, birch plywood with a minimum of 7 ply construction.
  - 2. Fixed lengthwise Lock connect, head joints Top connect.
  - 3. Top panels to be machine stapled and glued to the load distribution subfloor in the factory.
  - 4. Each panel installed tight to adjacent panels without spacers, gaps, or "washer-rows"
  - 5. Engineered construction of top panels and subfloor plywood requires no acclimation period at the job site.
  
- C. Finish
  - 1. Flooring shall be factory sanded and finished with Haro Permadur finish to ensure consistent application and eliminate job site dust and contaminates. Field sanding and finishing will not be required.

2. Minimum of 8 coat finish construction
  - a. 1 coat of sealer
  - b. 2 coats of leveler
  - c. 5 coats polyurethane
  - d. All urethane coats to be individually cured with ultraviolet (U.V.) light for maximum durability and eliminates the need for annual screening and recoating.
3. Game lines paints shall be formulated for compatibility on U.V. cured urethane finish and supplied by the floor manufacture.
  - a. Layout, design and colors as indicated on drawings
  - b. No additional coat of finish is required to be applied over the game lines.
- D. Load Distribution subfloor system
  2. Minimum 7 ply high-quality birch plywood load distribution strips.
  3. All Subfloor plywood pieces connected to topboards with glue and staples.
  4. Subfloor systems less than 7 ply or constructed of spruce, fir or pine not accepted.
- E. Resilient Underlayment
  1. 13/32 inch thick elastic layer, with Nike Grind material.
  2. Density: Minimum 8 lbs per cubic foot
  3. Elastic layer is continuous throughout the subfloor without any void areas or space between pads.
- F. Vapor Barrier over concrete slab
  1. Minimum 6 mil polyethylene
  2. Seams overlapped and sealed
  3. Floor systems requiring penetrations of the vapor barrier not allowed
- G. Vapor Barrier below concrete slab by others
- H. Vented wall base: Molded, vented, rubber cove base with premolded outside corners.

## PART 3 EXECUTION

### 3.01 EXAMINATION

- A. Examine substrates, areas and conditions, for compliance with requirements, installation tolerances, and other conditions affecting performance of wood flooring assembly. Proceed with installation only after unsatisfactory conditions have been corrected.
- B. All work required to put the concrete subfloors in acceptable condition shall be the responsibility of the general contractor including but not limited to flatness and moisture.
- C. Subfloor shall be broom cleaned by the general contractor prior to installation.

- D. Concrete Slabs: Verify that concrete slabs comply with requirements.
  - 1. Verify slabs do not exceed a maximum 1/8 inch deviation in any direction when checked with a 10 foot straight edge.
  - 2. Verify that slabs are dry according to test methods recommended in writing by flooring manufacturer.
    - a. When concrete slabs are tested according to ASTM F1869, Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride, less than 5.0 pounds of water/1000 sq.ft. of slab in a 24 hour period is required prior to installation.
    - b. When concrete slabs are dry according to ASTM F2170, Relative Humidity Test for Measuring the Relative Humidity of a Concrete Slab. Using the Relative Humidity Test the readings should be less than 75% RH per 1,500 s/f
- E. Coordinate blocking requirements with flooring system manufacturer and bleacher manufacturer. If requested by the flooring manufacture, detailed written information regarding bleacher system, supports, weight and castor locations shall be provided to the flooring contractor.

### 3.02 INSTALLATION, GENERAL

- A. General: Install materials and components in strict accordance with the manufacturer's written instructions.
- B. Install vapor barrier directly over concrete slab, lap and seal seams to provide a continuous membrane according to flooring manufacturer's written instructions. Do not puncture or damage vapor barrier membrane. Anchored floor systems that require puncturing top vapor barrier are not allowed.

### 3.03 ATHLETIC FLOOR INSTALLATION

- A. Install vapor barrier over concrete slab. Overlap and seal all seams. Do not puncture with tools, anchors, etc.
- B. Lay sheets of elastic underlayment over entire area. Loose lay and stagger seams.
- C. Install Top board/load distribution panels leaving a 1" gap from all protrusions and along perimeter walls. Fasten floor panel to adjacent panels by applying glue to load distribution connections.
- D. Install appropriate blocking under bleacher in the stacked position and below portable goals.

#### 3.04 SANDING AND FINISHING

- A. All sanding and finishing of the top hardwood playing surface is to be performed in the controlled environment of the specified flooring manufacture's facility.
- B. The General Contractor will not make any special job site or scheduling provisions to accommodate or allow for job site sanding and finishing.
- C. Wood athletic floor systems that require field sanding and finishing will not be approved.

#### 3.05 PAINTING GAME LINES

- A. Game lines shall be laid out in accordance with the project drawings and current rules of Athletic Association having jurisdiction. Lines shall be straight with sharp edges of colors selected by Architect.
- B. Mark game lines with game line paint from the floor manufacture's standard colors and let dry a minimum of 72 hours.
- C. The floor must be capable of walking and playing on within 72 hours of painting the game lines.

#### 3.06 BASE MOLDING

- A. Affix vented base to walls per manufactures instructions using appropriate adhesive. Use premolded outside corners and neatly miter inside corners.

#### 3.07 ADDITIONAL ACCESSORIES AND FIXTURES

- A. All other accessories not mentioned in these specifications to be furnished and installed by other trades, including but not limited to:
  - 1. Thresholds/expansion joint covers at door openings.
  - 2. Athletic equipment floor sleeves, anchors, cover plates, etc.
  - 3. Access covers, plates, boxes, etc for electrical, data or plumbing.

#### 3.08 CLEAN-UP

- A. Upon completion of the Work under this Section, remove from the premises unused materials, tools, and equipment and see that rubbish is disposed of properly.

END OF SECTION