

GENERAL CONDITIONS - SPECIFICATIONS

SECTION 096460 – WOOD ATHLETIC SPORTS FLOORING REMOVAL & REPLACEMENT PART 1 – GENERAL

1.01 **DESCRIPTION** - the complete removal and replacement of the wood sports floor system at Keyes Currie Coliseum at East Mississippi Community College in Scooba, MS.

Scope

1. The complete demolition and removal of the existing floor and installation of Robbins Bio-Channel Star floor system OR Equivalent. (New bleachers are being installed right after the new floor completion and will not be a factor during the demolition of existing floor and the new floor installation- There are no bleachers present at this time.)
2. Inspection of existing slab to verify if there is a need for the possible installation of a concrete topping and moisture barrier over the existing concrete slab or surface.
3. Concrete and Concrete Finishing –
 - a. Concrete Slab Depression: 2 1/8" (54mm) using 25/32" (20mm) flooring
 - b. Surface Finish: steel troweled and finished smooth.
 - c. Concrete Tolerance: +/- 1/8" (3mm) in radius of 10' (3m). High spots shall be ground level and low spots shall be filled in with approved leveling compound by the general contractor to meet the tolerance above. Floor Flatness and Floor Levelness (FF and FL) numbers are not recognized.
 - d. Compressive Strength: Concrete shall be a minimum of 3,000 psi (21 MPa) and a maximum of 4000 psi (28MPa) compressive strength after 28 days. Concrete shall be free of washed river gravel, pea gravel, flint, or hardener additives. No lightweight concrete.
4. Membrane Waterproofing and Damp proofing –
 - *If required as part of this project-
 - a. Concrete subfloors on or below grade shall be adequately waterproofed beneath the slab and at the perimeter walls and on the earth side of below grade walls by general contractor using suitable type membrane.
 - b. Sand-Poly-Sand slab construction is not an acceptable construction.
5. The complete installation of New Indoor Sports Floor System that meets or exceeds the standards and requirements noted in section 1.02 of this document, such as Robbins Bio-Channel Star or an approved equal.
6. Game Standard Inserts: The complete installation of necessary inserts/sleeves (with covers) for Volleyball posts/net support on all courts. , all areas shall have game standards installed.
7. Thresholds: Existing thresholds shall be removed during construction and reinstalled if possible. If existing thresholds cannot be reinstalled, new thresholds shall be installed.

1.02 REFERENCES

- A. MFMA - Maple Flooring Manufacturers Association
- B. MFMA PUR – Performance Uniformity Requirements
- C. DIN 108032 (part 2) 2001 - Performance Test
- D. DIN 108032 (part 2) 1991 - Performance Test
- E. ASTM F2772 - Athletic Performance Properties of Indoor Sports Floor Systems
- F. EN 14904 – European Committee for Standardization – Surfaces for Sports areas
- G. ASTM F2772 - Athletic Performance Properties of Indoor Sports Floor Systems
- H. FIBA – International Basketball Federation
- I. FSC – Forest Stewardship Council

1.03 QUALITY ASSURANCE

A. Manufacturer Qualifications

1. Basis of design shall be Bio-Channel Star floor system as provided by Robbins Sports Surfaces, www.robbinsfloor.com, (800-543-1913); products accepted as equal, provided ALL system materials and performance criteria are met:

- a. Connor Sports – S-Channel, anchored with full blanket, open-cell foam pad
- b. Action Flooring – ChannelFlex Ultra F, anchored with full blanket, open-cell foam pad

3. Manufacturer shall be an established firm experienced in products specified in this section and have been in business for a reasonable amount of time, Robbins, Inc. or an approved equal.

4. Manufacturer shall be a member in good standing of the Maple Flooring Manufacturers Association (MFMA) for a reasonable amount of time.

5. Materials other than those listed must be approved 10 days prior by written addendum. Materials from non-approved manufacturers will not be accepted.

B. Floor Contractor/Installer Qualifications and Certifications

1. The flooring contractor shall be Certified by the manufacturer with MFMA Accredited Installer(s) on-site for the duration of the wood floor installation.
2. Flooring contractor shall submit a list of at least three completed projects of similar magnitude and complexity completed under current corporate identity.

C. Floor System Performance Requirements

1. The Submitted indoor sports floor system shall meet or exceed criteria of the following performance criteria:
 - a. MFMA PUR
 - b. DIN 18032 Part2 2001
 - c. DIN 18032 Part2 1991
 - d. ASTM F2772 Sport Floor Standards
 - e. FIBA International Standards
 - f. EN 14904 Standards
2. Independent testing report showing the system passing all criteria shall be provided as part of the bid qualification process and submittal process.
3. Surface Appearance (available option)
 - a. Expansion spaces will not exceed 1/64" (0.4mm) at time of installation and will be spread evenly across the floor with each row of flooring.
 - b. Expansion spacing will be installed to allow for normal expected increases in Equilibrium Wood Moisture Content (EMC).
4. The wood flooring shall be MFMA-FJ maple; MFMA-RL maple will not be accepted.
5. Maple Flooring shall have been tested in accordance with California Department of Public Health/EHLB/Standard Method Version 1.2, 2017 and been found to be in compliance with the standard.
6. Individual resilient pads or closed-cell foam pad will not be accepted; resilient pad must full-blanket under the subfloor, strips of resilient pad will not be accepted.
7. The use of power-actuated or pneumatic anchoring systems is not allowed. The floor system must be anchored using the drilled and pinned method.
8. Metal Channel anchorage shall be provided by 16-gauge (1.5mm) steel sections with subfloor anchor pockets dimensioned to allow a minimum of 1" (25mm) lateral movement. Singular pins without steel channels or plastic anchor systems will not be accepted.

9. Steel anchor channels shall be of double flange design to capture both side edges of subfloor anchor pocket.

10. Subfloor and metal channel design shall be constructed in a fashion to prevent the over anchorage of the flooring system. Special anchorage tools are not acceptable.

1.04 SUBMITTALS

- A. Specification
 - 1. Submit specification sheet for the approved indoor sports floor system
- B. Drawing
 - 1. Submit shop and field drawings as required.
- C. Sample
 - 1. Submit one (1) sample of **approved** indoor sports floor system.
- D. Concrete Guidelines
 - 1. Submit "Concrete Guide Specification" for further information regarding conditions and requirements of concrete prior to installation.
- E. Maintenance Guidelines
 - 1. Submit copy of Maintenance Instructions for indoor sports floor system

1.05 DELIVERY, STORAGE AND HANDLING

- A. Delivery of Materials
 - 1. Materials shall not be delivered, stored or installed until all masonry, painting, plastering tilework, marble and terrazzo work is complete, and all overhead mechanical work, lighting, backstops, scoreboards are installed. **Room temperature of 55-80 degrees Fahrenheit (13 to 27 degrees Celsius) and relative humidity of 35-50 % are to be maintained.** In- Slab Relative Humidity shall be 85% or less using ASTM F 2170 In-Slab Relative Humidity test. Ideal installation/storage conditions are the same as those that will prevail when building is occupied.
 - 2. Materials shall not be stored at the installation location if the In-Slab relative humidity level for the concrete slab is above 85% using ASTM F 2170 In-Slab Relative Humidity test.

1.06 JOB CONDITIONS - SEQUENCY

- A. Do not install floor system until concrete has been cured 60 days and the requirements in paragraph 1.05 A are obtained.
- B. Contractor is responsible for ensuring the slab is clean and free of all dirt and debris prior to floor installation beginning.
- C. Permanent heat, light and ventilation shall be installed and operating during and after installation. **Maintain a temperature range of 55 to 80 degrees Fahrenheit (13 to 27 degrees Celsius) and a relative humidity range of 35 to 50%.** Consult MFMA guidelines for further information.
- D. After floors are finished, area to be kept locked by owner to allow curing time for the finish. If after required curing time owner requires use of gym, he shall protect the floor by covering with non-fibered kraft paper or red rosin paper with taped joints, until acceptance by owner (or owner's agent) of complete gymnasium floor.

1.07 WARRANTY

A. Guarantee shall not cover damage caused in whole or in part by casualty, ordinary wear and tear, abuse, use for which material is not designed, faulty construction of the building, settlement of the building walls, failure of the other contractors to adhere to specifications, separation of the concrete slab and excessive dryness or excessive moisture from humidity, spillage, migration through the slab or wall, or any other source.

B. The manufacturers shall warrant material to be free from manufacturing defects for a period of 1 year. This warranty is in lieu of all other warranties, expressed or implied including but not limited to any warranty of merchantability or fitness for a particular purpose, and of any other obligations on the part of manufacturer. In the event of breach of any warranty, the liability of Robbins shall be limited to repairing or replacing the material and system components supplied by the manufacturer and proven to be defective in manufacture, and shall not include any other damages, either direct or consequential.

PART 2 – PRODUCTS

2.01 MATERIAL

A. Vapor Barrier 1. 6-mil polyethylene.

a. Moisture Suppression System for projects with high concrete moisture.

B. Subfloor

1. 9/16" Zero/G™ full-blanket, open-cell shock pad; individual resilient pads, strips of foam pad, or closed-cell foam pads will not be accepted.

2. plywood subfloor panels that have been factory prepared to accept anchor channels; HPS or OSB panels will not be accepted.

3. 16-gauge Metal Anchor Channels; thinner gauge metal or polycarbonate (plastic) anchors will not be accepted. Singular pins without metal anchor channels will not be accepted.

C. Maple Flooring Manufacturers Association (MFMA) Wood Flooring:

1. 25/32" (20mm) thick x 2 1/2" (63mm) face width; 2-1/4" (57mm) face width available at mill discretion; 2nd & Better grade; Factory Sanded Advantage™ XL (Non-Factory Sanded maple available as contractor option); T&G and EM, KD Northern Hard Maple; Continuous Strip XLplus™ Flooring as manufactured by Robbins and graded in accordance with MFMA-FJ rules. Flooring will have XLplus™ technology to reduce or eliminate routine spacing for expansion.

a. Grade: 2nd and Better

D. Finishing materials

1. MFMA approved sealer

2. MFMA approved finish

E. Game lines & graphics

1. Include \$25,000 graphics allowance for court markings. (Basketball & Volley Ball)
2. Game line paint(s) shall be recommended by the finishing materials manufacturer and must be compatible with the finish.
3. Game Time Graphics permanent vinyl logos and court markings are also acceptable.

F. Perimeter

1. 3" x 4" ventilating type. (Specify black or brown)

PART 3 – EXECUTION

3.01 INSPECTION

A. Inspect concrete slab for proper tolerance and dryness and report any discrepancies to the general contractor and architect in writing. Slab will be level to within 1/8" (3mm) in a 10' (3m). Moisture content of the concrete slab shall not exceed 85% using ASTM F 2170 In-Slab Relative Humidity test.

B. All work required to put the concrete subfloors in acceptable condition shall be the responsibility of the general contractor.

C. Subfloor shall be broom cleaned by general contractor.

D. Installer shall document all working conditions provided in General Specifications prior to commencement of installation.

E. Properly remove and dispose of existing wood athletic sports flooring system. Flooring contractor to provide dumpsters with locations coordinated with the owner or owner's representative. Provide moisture barrier between existing concrete slab and new concrete topping.

F. If needed install Portland based concrete topping to ensure a correct slab depression to accommodate new wood athletic sports flooring system.

3.02 INSTALLATION

A. VAPOR BARRIER

1. Install polyethylene with joints lapped a minimum of 6" (150mm) and turned up 4" (100mm) at the walls.

B. SUBFLOOR

1. Install shock absorbing pad per manufacturer's recommendations over 6 mil poly.

2. Following manufacturer's guidelines, place plywood panels, as defined in section 2.01, subfloor assembly in end-to-end manner, staggering end joints in adjacent rows. Allow for a 1/4" (6mm) gap between panels. Panels shall be placed on a 45-degree angle to the direction of the maple flooring. Provide 1-1/2" to 2" (40 to 50mm) expansion void at the perimeter and all vertical obstructions.

3. Install solid blocking at doorways, under bleachers in the stacked position, and below portable goals.
4. Install Bleacher Blocking per manufacturer's recommendations.
5. Place metal anchor channel in each factory-prepared location in the panel.
6. Anchor each anchor channel in the center pre-routed hole only, unless trimming at wall or vertical obstruction requires relocation in adjacent location to anchor.

C. **FLOORING**

1. Machine nail maple finish flooring 10" to 12" (150mm to 200mm) O.C. with end joints properly driven up and proper spacing provided for humidity conditions in specific regions. Consult your local "Certified" contractor. Provide 2" (50mm) expansion voids at the perimeter and at all vertical obstructions.

3.03 FINISHING

A. **SANDING**

1. Sand per manufacturer's recommendations.
2. After sanding, buff entire floor using 100 grit screen or equal grit sandpaper, with a heavyduty buffing machine.
3. Inspect entire area of floor to ensure the floor presents a smooth surface without drum stop marks, gouges, streaks or shiners.
4. Vacuum and/or tack floor before first coat of seal.

B. **FINISHING**

1. Floor should be clean and completely free of dirt and sanding dust.
2. Apply specified combination of seal, game line paint, and finish in accordance with manufacturer's instructions.
3. Buff and vacuum and/or tack between each coat after it dries.
4. Apply game lines accurately after the buffing and vacuuming the coated surfaces. Game lines shall be painted between seal coats and finish coats. Layout in accordance with drawings. For game lines, use current rules of association having jurisdiction. Lines shall be straight with sharp edges in colors selected by architect.

3.04 WALL BASE AND THRESHOLD INSTALLATION

- A. Install vent cove base anchored to walls with base cement or screws. Use pre-molded outside corners and neatly mitered inside corner.
- B. Furnish and install new aluminum expansion cover plates at entryways.

3.05 CLEANING

- A. Clean up all unused materials and debris and remove it from the premises.

3.06 MAINTENANCE

A. Upon completion of floor installation, the owners, attendants, or individuals in charge are responsible for the upkeep of the building and are to see that the care and maintenance instructions of the MFMA and indoor sports floor system manufacturer.