

Specification Note:

The following specifications call out the material and default installation requirements necessary for the floor as recommended by Robbins Sports Surfaces. In some cases, local codes, physical requirements or installer recommendation may override these methods and procedures. It is Robbins recommendation to review the specification with a Regional Sales Manager or the local Authorized Dealer before incorporating the specification into the project design. Some options impact installed cost and verification of the design and budget is advised.

For the name of the local Robbins representative or dealer, contact Robbins at 1-800-543-1913 or on the web at www.robbsfloor.com.

SECTION 09 / GUIDE SPECIFICATIONS FOR
ROBBINS® NEW & IMPROVED BIO-CHANNEL® STAR FLOOR SYSTEM
(Anchored and Resilient)

SECTION 096466 – WOOD ATHLETIC FLOORING

PART 1 – GENERAL

1.01 DESCRIPTION

- A. Related work specified under other sections. (A cross-reference should be incorporated in these sections.)
 - 1. Concrete and Concrete Finishing - Section 03___.
 - a. Concrete Slab Depression: 2 1/8" (54mm) using 25/32" (20mm) flooring and subfloor.
 - b. Surface Finish: steel troweled and finished smooth.
 - c. Concrete Tolerance: +/- 1/8" (3mm) in radius of 10' (3m).
 - d. Floor Flatness and Floor Levelness (FF and FL) numbers are not recognized.
 - e. 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.
 - f. 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.
 - 2. Membrane Waterproofing and Dampproofing - Section 07___.
 - 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.
 - 3. Thresholds - Section 08___.
 - 4. Game Standard Inserts - Section 11___.
 - 1.02 REFERENCES

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- 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. Floor System Manufacturer Qualifications

1. Basis of design shall be **New & Improved Bio-Channel Star** floor system as provided by Robbins Sports Surfaces, www.robbinsfloor.com, (800-543-1913)
 2. Manufacturer shall be an established firm experienced in field and have been in business or a minimum of ten (10) years; Robbins, Inc. or an approved equal.
 3. Manufacturer will be a member in good standing of the Maple Flooring Manufacturers Association (MFMA).
- B. Floor Contractor/Installer Qualifications and Certifications
1. The flooring contractor shall be a Robbins Accredited Installation with MFMA Accredited Installer(s) on-site for the duration of the wood floor installation; or, a contractor approved by Robbins Sports Surfaces.
 2. Flooring contractor shall submit a list of at least three completed projects of similar magnitude and complexity completed under current corporate identity.
- C. Surface Appearance (available option)
1. 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.
 2. Expansion spacing will be installed to allow for normal expected increases in Equilibrium Wood Moisture Content (EMC).
- D. Floor System Performance
1. **New & Improved Bio-Channel Star** meets or exceeds 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.
- 1.04 SUBMITTALS
- A. Specification and Drawings
1. Submit Robbins **New & Improved Bio-Channel Star** specification sheet.
 2. Submit Robbins **New & Improved Bio-Channel Star** drawings as required.
- B. Sample
1. Submit one (1) sample of **New & Improved Bio-Channel Star**, if requested by architect
- C. Concrete Guidelines
1. Submit MFMA Recommendations for correct preparation, finishing and testing of concrete subfloor surfaces to receive wood flooring.
 2. Submit Robbins Technical Services "Concrete Guide Specification" for further information regarding conditions and requirements of concrete prior to installation.
- D. Maintenance Guidelines
1. Submit copy of Maintenance Instructions.
- 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. General Contractor is responsible to ensure 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 general contractor to allow curing time for the finish. If after required curing time general contractor or 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. Robbins, Inc. hereby warrants the **New & Improved Bio-Channel Star** 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 Robbins. In the event of breach of any warranty, the liability of Robbins shall be limited to repairing or replacing **New & Improved Bio-Channel Star** material and system components supplied by Robbins 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.
- B. Subfloor
 - 1. 9/16" Zero/G™ shock pad.
 - 2. Bio-Channel Star Subfloor panels that have been factory prepared to accept anchor channel.
 - 3. Metal Anchor Channels.
- C. Maple Flooring Manufacturers Association(MFMA) Wood Flooring
 - 1. Specie: Northern Hard Maple
 - 2. Seasoning: Kiln Dried
 - 3. Matching: Tongue and groove on side-match and end-match.
 - 4. Type: Finger-Jointed (FJ)
 - a. Options (delete or modify above):
 - 1) Random Length(RL)
 - 5. Pattern: Straight-lay (One directional)
 - a. Options (delete or modify above):
 - 1) Boston Square
 - 6. Thickness: 25/32"
 - a. Options (delete or modify above):
 - 1) 33/32"(26mm)
 - 7. Width: 2 ¼"
 - a. Options (delete or modify above):
 - 1) 1 ½"
 - 2) 3 ¼"
 - 8. Grade: 2nd and Better

- a. Options (delete or modify above):
 - a) 1st Grade
 - b) 3rd and Better
 - c) 3rd Grade.
- 9. Expansion Option: Standard
 - a. Options (delete or modify above):
 - 1) PLUS Feature(Built-in expansion)
- 10. Factory Finish: Unfinished
 - a. Options (delete or modify above):
 - 1) Factory Sanded.
 - 2) Factory Sealed.
 - 3) Factory Finished.
- 11. Treatment: Un-Treated
 - a. Options (delete or modify above):
 - 1) Dri-Vac Treated
- 12. Certified Wood: Non FSC
 - a. Options (delete or modify above):
 - 1) FSC
- D. Fasteners
 - 1. Flooring 1 3/4" (44mm) barbed cleats or staples.
 - 2. Channel anchors – 2" Powers SPIKE® anchors.
- E. Finishing materials
 - 1. MFMA approved oil-modified Sealer
 - 2. MFMA approved oil-modified Finish
- F. Gamelines
 - 1. Gameline paint(s) shall be recommended by the finishing materials manufacturer, and must be compatible with the finish.
- G. 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.

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 Robbins shock absorbing pad per manufacturer's recommendations over 6 mil poly.
 - 2. Following manufacturer's guidelines, place Bio-Channel Star 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 Robbins "Certified" contractor. Provide 2" (50mm) expansion voids at the perimeter and at all vertical obstructions.
OPTION: (Specify or Delete) Expansion rows will be evenly distributed with each row of flooring, with each space not exceeding 1/64" (0.4mm).
- 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 heavy-duty buffing machine.
 3. Inspect entire area of floor to insure 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.
 5. Floor should be clean and completely free of dirt and sanding dust.
- B. FINISHING
1. Gymnasiums (delete if not applicable)
 - a. Apply specified combination of seal, gameline paint, and finish in accordance with manufacturer's instructions.
 - b. Buff and vacuum and/or tack between each coat after it dries.
 - c. 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.
 2. Stages and Auditoriums (delete if not applicable)
 - a. Apply 2 or more coats of penetrating sealer, buffed in accordance with manufacturer's instructions in order to provide a low gloss, flat finish. Robbins recommends that stages be finished in walnut or darker colors for theatrical performance.
- 3.04 Wall Base Installation
- A. Install vent cove base anchored to walls with base cement or screws. Use pre-molded outside corners and neatly mitered inside corner.
- 3.05 Cleaning
- A. Clean up all unused materials and debris and remove it from the premises.

END OF SECTION 096466

Construction options are available to modify this system to the project design and budget. Contact your Regional Sales Manager(1-800-543-1913) or the local Authorized Dealer for more information.