

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® BIO-CHANNEL® LP STAR FLOOR SYSTEM
 (Meets all sections of DIN 18032 part 2₂₀₀₁)
 (Anchored and Resilient)

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 FinishingSection 03300
 - a. Concrete Slab Depression: 1-3/4" (44mm)
 - b. Surface Finish: steel troweled and finished smooth.
 - c. Concrete Tolerance: 1/8" (3mm) in radius of 10' (3m).
 - 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.
 - e. Floor Flatness and Floor Levelness (FF and FL) numbers are not recognized.
 2. Membrane Waterproofing and Dampproofing.....Section 07100
 - 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. ThresholdsSection 08700
 4. Game Standard Inserts.....Section 11500

1.02 QUALITY ASSURANCE

- A. Floor System Manufacturer Qualifications
1. 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.
 2. Manufacturer will be a member in good standing of the Maple Flooring Manufacturers Association (MFMA).
- B. Floor Contractor/Installer Qualifications and Certifications
1. Flooring contractor shall be a firm experienced in flooring field and approved by manufacturer.
 2. Submit a list of at least three completed projects of similar magnitude and complexity.
- 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. System Performance Requirements:
1. **Bio-Channel LP Star** meets or exceeds all **6 criteria of DIN 18032 Part II** (2001)
 2. Independent testing report shall be provided as part of the bid qualification process and submittal process if requested.

E. *Notes to Specifier* – regarding System Equivalents

1. System must have slab depression of 1-3/4" (44mm)
2. System must have continuous subfloor construction and homogenous compounded resilient pads.
3. Equivalent systems shall meet or exceed all 6 criteria of be DIN 18032 Part 2 (2001). 3rd party documentation must be submitted.
4. All 3rd party laboratory test reports must contain description of total system construction and identify system components.
5. Expansion spacing must be installed between every row of flooring throughout entire floor for purpose of appearance and stability.
6. Subfloor seams directly under maple must be diagonal to strip flooring.

1.03 SUBMITTALS

A. Manufacturer's Product Data

1. Submit three (3) Robbins **Bio-Channel LP Star** Floor System specification sheets..
2. Suppliers shall submit certificates attesting that materials furnished will meet specifications for grade, quality, dryness and treatment, if required.

B. Concrete Guidelines

1. Submit three (3) copies of 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.

C. Samples

1. Submit one (1) sample of **BioChannel LP Star**, if requested by architect. Sample to be made by the manufacturer and so indicated.

D. Maintenance Literature

1. Submit copy of Maintenance Instructions.

1.04 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.

1.05 JOB CONDITIONS-SEQUENCY

- A. Do not install floor system until concrete has been cured 60 days and the requirements in paragraph 1.04 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.

1.06 GUARANTEE

- 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 **Bio-Channel LP 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 **Bio-Channel LP 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 MATERIALS

- A. Vapor Barrier
1. 6-mil polyethylene
 - a. **Options (delete or modify above):**
 - 1) Moisture Suppression System for projects with high concrete moisture.
- B. Subfloor
- a. Robbins 5/8" Bio-Profiled Zero/G™ shock pad.
 - b. Bio-Channel LP Subflor panels that have been factory prepared to accept anchor channel.
 - c. 14 gauge metal LP Anchor Channels.
- C. Maple Flooring
1. 1/2" (11mm) thick x 2-1/4" (57mm) width, 2nd&Btr grade, Unfinished TGEM, KD Northern Hard Maple, Continuous Strip® XL₄₅₀ Flooring as manufactured by Robbins and graded in accordance with MFMA-FJ rules. Flooring will have XL_{plus}™ technology to reduce or eliminate routine spacing for expansion.
 - a. **Options (delete or modify above):**
 - 1) Grade
 - a) 3rd Grade.
 - 2) Finish treatment
 - a) Factory-Sanded.
 - b) Factory Sealed.
 - c) Factory Finished (for installations requiring no painting and/or further finishing).
 - 3) Pattern
 - a) Boston Square(only available in 2nd and Btr grade& Unfinished).
 - 4) Certified Wood
 - a) FSC certified lumber.
 - 5) Expansion Option-
 - a) Standard Continuous Strip XL450 product may be substituted for consistently low humidity regions.
- D. Fasteners
1. Flooring
 - a. 1-1/4" (32mm) 18 gauge cleats or staples.
 2. Subfloor
 - a. Channel anchors – Powers SPIKE® anchors.
- E. Robbins Miracle or approved equal oil-modified polyurethane sealer and finish.
- F. Gameline paint(s) shall be recommended by the finishing materials manufacturer, and must be compatible with the finish.
- G. Perimeter Base - Robbins 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 LP 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 diagonal to the direction of the maple floor. 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 LP anchor channel in each factory-prepared location in the panel.
6. Anchor each LP Channel in the center pre-drilled hole only, unless trimming at wall or vertical obstruction requires relocation in adjacent location to anchor.

C. Maple Flooring

1. Machine nail maple finish flooring 6" to 8" (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. 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

1. Install Robbins vent cove base anchored to walls with base cement or screws and anchors. Use pre-molded outside corners and neatly mitered inside corner.

3.05 CLEANING

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

Construction options are available to modify this system to the project design and budget. Contact your Regional Sales Manager or the local Authorized Dealer for more information.

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