

# **GUIDE SPECIFICATION - ROBBINS BIO-CHANNEL II® SUSPENDED MAPLE FLOOR SYSTEM**

## **DIN APPROVED (DIN STANDARDS 18032, PART 2)**

### **Part 1 - GENERAL**

#### **1.01 DESCRIPTION**

A. Related work specified under other sections. (A cross reference should be incorporated in these sections.)

1. Concrete Slab Depression: 2-7/8" (3-1/8" for 33/32" thick flooring)
2. Concrete Tolerance - 1/8" in radius of 10' Surface - steel troweled.
3. Concrete and concrete finishing.....Section 03300

NOTE:

- 1) Concrete shall be 2,500 - 3,000 psi compressive strength after 28 days.
- 2) Concrete shall be free of washed river gravel, pea gravel, fling or hardener additives.
- 3) No lightweight concrete shall be allowed.
4. Game Standard inserts.....Section 11500
5. Membrane Waterproofing and Dampproofing.....Section 07100
  - a. Concrete subfloors on or below grade shall be adequately waterproofed beneath and at the perimeter of the slab and on the earth side of below grade walls.
6. Thresholds - Metal.....Section 08700

#### **1.02 QUALITY ASSURANCE**

A. Floor System Manufacturer Qualifications

1. Manufacturer shall be a member in good standing of the Maple Flooring Manufacturers Association.
2. Manufacturer shall be a firm established in the field and have been in business for a minimum of ten (10) years; Robbins, Inc. or an approved equal.

B. Floor Contractor/Installer Qualifications

1. Flooring contractor shall be a firm experienced in flooring field and approved by the manufacturer.
2. Submit a list of at least three (3) completed projects of similar magnitude and complexity.

C. Performance Qualifications of Flooring System

1. Floor system shall have been tested and passed the requirements of DIN 18032, Part II as set out below.
  - a. Shock absorption shall be 63% minimum.
  - b. "Uniformity" of shock absorption of plus or minus 2 percentage points shall be maintained throughout entire surface at each test point using DIN test 18032, Part II.
  - c. Ball return shall be at least 98% when tested against concrete.
  - d. Deflection:
    - (1) Point of Impact: 2.5 mm minimum.
    - (2) 20" from Point of Impact: 15% of Point of Impact Maximum.
  - e. Friction: Range 0.5 - 0.7 per DIN Test Method.
  - f. Rolling Load: 337.6 lbs. Weight Capacity without damage.

**NOTE:** It is the intent of the (name owner) to procure a flooring system which meets or exceeds all of the criteria set forth in the internationally accepted DIN Standards (DIN 18032, Part II). The owner may, at their discretion and expense, have the finished flooring tested by an

independent certified DIN testing agency (i.e., Otto Graf Institut, Stuttgart, Germany). Should the finished flooring fail to pass these stringent standards, the owner may require the flooring to be removed and replaced with a floor which will pass these standards. Removal and replacement at no expense to the owner.

D. Submit three (3) copies of WSFI Recommendations for correct preparation, finishing and testing of concrete subfloor surfaces to receive wood flooring.

### **1.03 SUBMITTALS**

#### **A. Manufacturer Product Data**

1. Submit certification that floor system to be provided has been tested by the Otto Graf Institut, Stuttgart, Germany, and meets or exceeds the minimum standards as established by DIN 18032, Part II, area-elastic gymnasium floor.
2. Submit three (3) Data Sheets with Specifications for specified floor system.

#### **B. Samples**

1. Submit one (1) sample of the specified floor system, made by the manufacturer and so indicated.

#### **C. Maintenance Literature**

1. Submit three (3) copies of "WSFI Care and Preservation of Your Wood Floors."

#### **D. Certification**

1. Manufacturer shall submit certificates attesting the materials furnished will meet specification for grade, quality, dryness and treatment, if required.

### **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 are complete. All overhead mechanical work, lighting, backstops, scoreboards are installed. Room temperature of at least 60 to 80 degrees Fahrenheit and relative humidity of 35 to 50% are to be maintained. Ideal installation/storage conditions are the same as those which will prevail when building is occupied.

### **1.05 JOB CONDITIONS**

A. Do not install floor system until concrete has been cured 60 days and requirements in paragraph 1.04 A.1. are obtained.

B. Permanent heat, light and ventilation shall be installed and operating during and after installation of floor system. Maintaining a temperature range of 60 to 80 degrees Fahrenheit and a relative humidity range of 35 to 50%.

C. After floors are finished, area to be kept locked to allow curing time for the finish. If after curing time for the finish, the general contractor or owner requires use of area, he shall protect the floor by covering with non-fibered kraft paper or red rosin paper with taped joints, until acceptance of area by owner.

### **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 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 II 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 obligation 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 II 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. Membrane

1. 6 mil polyethylene

#### B. Bio-Channel II System

##### 1. Bio-Channel System Channels

a. 1-3/8" x 2-5/8" x 8' factory assembled steel encased sleeper. Sleeper must be free to move vertically within steel channel confines to assure proper uniformity of resiliency and function.

##### 2. Sub-floor

a. Plywood - 3/4" thick x 4' x 8' CD-Exterior grade fir or Southern pine, minimum, 4 ply.

##### 3. Flooring

a. 25/32" thick x 2-1/4" width, second and better grade, cross-profiled, T & G and EM, KD Northern Hard MFMA Maple, as manufactured by Robbins and graded in accordance with MFMA Standards. Profiled maple cross-profiled Channel Cushion II maple for added flexibility and resilience (conforms to DIN 18032 Part II.)

OR

b. 33/32" thick x 2-1/4" width, second and better grade, cross-profiled, T & G and EM, KD Northern Hard Maple, as manufactured by Robbins and graded in accordance with MFMA Standards. Profiled Maple cross-profiled Channel Cushion II maple for added flexibility and resilience (conforms to DIN 18032 Part II).

NOTE: Ask your Robbins representative for other alternatives regarding: Grade, Thickness and Widths.

#### C. Fasteners

##### 1. Flooring

a. 1-3/4" barbed cleats or staples.

##### 2. Sub-floor

a. 1-1/2"- 1-5/8" subflooring nails or staples.

##### 3. Channel Anchors

a. 1-1/4" pneumatic or power actuated concrete anchor.

#### D. Other Materials

1. Perimeter base - Robbins 3" x 4" Black ventilating type.

##### 2. Finishing Materials

a. Shall be approved by the Maple Flooring Manufacturers Association and meet all requirements as set forth by the EPA.

b. Game line paint shall be as recommended by finishing materials manufacturer, compatible

with the finish.

### **Part 3 - EXECUTION**

#### **3.01 INSPECTION**

- A. Inspect the concrete subfloors for proper tolerance and dryness, and report any discrepancies to the general contractor in writing.
- B. All work required to put concrete subfloors in acceptable condition shall be the responsibility of the general contractor.
- C. Subfloors shall be broom cleaned by the general contractor.

#### **3.02 INSTALLATION**

- A. ROBBINS Bio-Channel II System.
  - 1. Place polyethylene film over concrete subfloor overlapping edges 6" minimum.
  - 2. Place Bio-Channel sleeper channels 17" O.C. end to end, staggering end joints and anchors in adjacent rows.
  - 3. Level Channel Cushion sleepers using appropriate shim thicknesses at predetermined anchor locations. Position additional support material at mid-point between anchor pin locations.
  - 4. Anchor sleeper channels at predetermined locations.
  - 5. Install 3/4" plywood subfloor diagonal to sleeper channels. Securely nail subfloor 6" O.C. along each channel sleeper.
  - 6. Machine Nail maple finish flooring with end joints properly driven up and proper spacing provided for humidity conditions in specific regions. Provide 2" expansion voids at the perimeter and at all vertical obstructions.
  - 7. Sanding:
    - a. Sand flooring with a drum sander, edger, buffer, and hand scraper:
      - (1) Use coarse, medium and fine grade sandpaper.
      - (2) After sanding with drum sander, buff entire floor using 100 grit screen back or equal grit sandpaper with a heavy-duty buffing machine.
      - (3) Vacuum or tack floor before 1st coat of sealer.
      - (4) Floor shall present a smooth surface without drum stop marks, gouges, streaks or shiners.
    - b. Finishing
      - (1) Apply 1 coat of specified sealer and 3 coats of specified finish.
      - (2) Screen back or steel wool and vacuum or tack between each coat after it dries.
    - c. Game Lines
      - (1) Apply game lines accurately after the seal coat after buffing and vacuuming. Layout in accordance with drawings. For game lines, use current rules of association having jurisdiction. Lines shall be straight with sharp edges and colors selected by architect.
    - d. Perimeter Molding
      - (1) Install Robbins vent cove base anchored to walls with base cement or screws and anchors. Use premolded outside corners and neatly mitered inside corners.
    - e. Clean up all unused materials and debris and remove same from the premise.