



VARI-CUSHION SYSTEM

Vari-Cushion is a specially designed cushioned sport flooring system with a continuous layer of 1/4" (6mm) thick crosslinked closed cell polyethylene foam supporting the ever popular Thrust-A-Cushion pads. Vari-Cushion provides for two distinct levels of shock absorption; with a smooth transition from Stage I (Foam compression) through Stage II (Pad compression). Light loads only compress the 1/4" (6mm) closed cell polyethylene foam (Stage I) whereas heavier loads compress both foam and Thrust-A-Cushion pad (Stage II). The transfer of forces takes place smoothly and energy is returned to the participant in an efficient manner. Since the Vari-Cushion system consists of time proven components, the longevity of the system is assured.

PART 1-GENERAL

1.1 DESCRIPTION

- A. This document specifies a wood strip aerobic and gymnasium floor system consisting, in general, of wood subflooring, maple flooring, vapor retarder, sanding, sealers, finishes, game lines, and wall base.
- B. The general contractor shall provide a concrete slab, smooth troweled and level to a tolerance of 1/8" (3mm) in 10'0" (3m) radius, subject to the approval of the wood flooring contractor. LABOR AND MATERIALS NECESSARY TO PUT THE CONCRETE SLAB IN ACCEPTABLE CONDITION (HIGH AREAS GROUND DOWN AND LOW AREAS FILLED WITH APPROVED LEVELING COMPOUNDS) SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
 1. Concrete slab depression to use with 3/8" (10mm) padding shall be:
 - a. 2 1/4" (57mm) for 25/32" (20mm) thick flooring.
 - b. 2 1/2" (64mm) for 33/32" (26mm) thick flooring.
 2. Concrete slab depression to use with 5/8" (16mm) padding shall be:
 - a. 2 1/2" (64mm) for 25/32" (20mm) thick flooring.
 - b. 2 3/4" (70mm) for 33/32" (26mm) thick flooring.
 3. Concrete slab depression to use with:
 - a. 5/16" (8mm) Multisport shall be 2" (51mm)
 - b. 1 1/16" (17mm) Multisport shall be 2 3/8" (60mm)
 4. Concrete subfloors shall have an adequate vapor retarder beneath and at the perimeter of the slab.

1.2 QUALITY ASSURANCE

- A. Supplier Qualifications
 1. Supplier of wood flooring shall be Horner Flooring Company.
- B. Installer Qualifications
 1. Flooring contractor shall be a firm experienced in maple flooring systems.
- C. Flooring shall be stored on the premises a minimum of seven (7) days before installation commences, or as required for acclimation. Final determination as to acclimation will be made by the flooring contractor.
- D. All flooring bundles or cartons should be broken and loosely piled to acclimate the flooring to moisture conditions in the building.

1.3 WORKING CONDITIONS

- A. The floor system shall not be delivered or installed until all masonry, plastering, tile work and overhead mechanical trades are completed and building is enclosed and weathertight.
- B. Permanent heat, light and ventilation shall be installed and operative during and after installation, maintaining a temperature range of 55°F (13°C) to 75°F (24°C) and a relative humidity range of 35% to 50%.

1.4 WARRANTY

- A. Horner Flooring Company hereby warrants the VARI-CUSHION SYSTEM flooring materials to be free from manufacturing defects for a period of one year from the date of substantial completion.

PART 2-PRODUCTS

2.1 MATERIALS

- A. Flooring shall be Horner 33/32" (26mm) or 25/32" (20mm) thick x 2 1/4" (57mm) or 1 1/2" (38mm) wide First, Second and Better, Third and Better or Third Grade, continuous tongue and groove and end-matched MFMA Northern Hard Maple, grade marked and stamped as manufactured by Horner Flooring Company.
OPTION: Horner Long Life™ flooring if so specified.
OPTION: Horner Multisport flooring, 5/16" (8mm) or 1 1/16" (12mm) thick Select and Better Grade if so specified.
- B. Vapor retarder shall be 6 mil polyethylene.
- C. VARI-CUSHION foam shall be 1/4" (6mm), multicellular, closed cell polyethylene foam, 2 PCF.
- D. VARI-CUSHION pads shall be 2 1/4" x 3" x 3/8" or 5/8" (57mm x 76mm x 10mm or 16mm) thick, as supplied by Horner Flooring Company, and attached 12" (305mm) o.c. by flooring contractor.

- E. Subfloor shall be 15/32" x 4' x 8' (12mm x 122cm x 244cm) rated sheathing, exposure 1, plywood or 7/16" (11mm) OSB board, as approved by manufacturer.
- F. Fasteners shall be 2" (51mm) barbed cleat or 15 gauge (1.8mm) coated staples.
OPTION: If Horner Long Life™ is specified, use 2" (51mm) 15 gauge (1.8mm) staples only.
- G. Wall Base shall be 3" x 4" (76mm x 102mm) Vent Cove heavy duty molded, vented vinyl base with premolded outside corners as supplied by Horner Flooring Company. Specify color: black or brown.
- H. Finish material shall be as specified by architect selected from the latest listing provided by the MFMA, and shall be applied according to manufacturers instructions.

PART 3-EXECUTION

3.1 INSPECTION

- A. Inspect concrete slab for proper tolerance and dryness and report any discrepancies to the general contractor for correction.
- B. The concrete slab shall be cleaned of all debris so flooring contractor will have adequate access to work surface.
- C. All work required to put the concrete slab in an acceptable condition shall be the responsibility of the general contractor.

3.2 INSTALLATION

- A. Cover concrete with 6 mil poly, sealing and lapping joints at a minimum of 4" (102mm.).
- B. Roll out VARI-CUSHION foam over polyethylene, butting and taping end and side joints.
- C. With the aid of a stapler, attach 32 Horner THRUST-A-CUSHION pads to the underside of each bottom sheet of 15/32" (12mm) rated sheathing, exposure 1, or 7/16" (11mm) OSB, 12" (305mm) o.c. and 6" (152mm) in from all perimeter edges.
- D. Install padded bottom layer of 4' x 8' (122cm x 244cm) sheets at a 45° angle across the long dimension of the finish floor, leaving a minimum ¼" expansion space between adjoining sheets.
- E. Install top layer of 4' x 8' (122cm x 244cm) sheets at a 90° angle to the first layer, again leaving a minimum ¼" (6mm) expansion space between adjoining sheets.
- F. Install finish flooring parallel with main playing court by power nailing or stapling approximately 12" (305mm) o.c..
 - 1. Space joints between flooring strips to allow for intermediate expansion, as designated by the installer and in accordance with humidity conditions in the region.
 - 2. Provide 2" (51mm) expansion voids at perimeter and all vertical obstructions.
- G. LAYOUT - MULTISPORT
 - 1. Locate STARTING point either by centering off a door, a special focal point in the area, or the center of the area itself.
 - 2. Adjust center lines so they are perpendicular (90°) to each other. After lines are squared, drop chalk lines every thirty-three (33) inches (838mm), and install within the grid formed by the chalk lines.
 - 3. Use Bostik Best Moisture Cure Urethane Adhesive over concrete, wood or particle board.
 - 4. MultiSport units should be installed with hairline expansion spacing along the perimeter of each unit when installed in an alternating square manner. When installing in a unidirectional or parallel pattern it is only necessary to include spacing along the sides of each unit, as maple does not shrink or swell appreciably in the grain direction.

3.3 FLOOR SANDING

- A. Machine sand with coarse, medium and fine paper to a smooth, even and uniform surface.
- B. Remove sanding dust from entire surface by tack or vacuum.
- C. Refer to MFMA sanding and finishing guide for procedures.

3.4 FINISHING

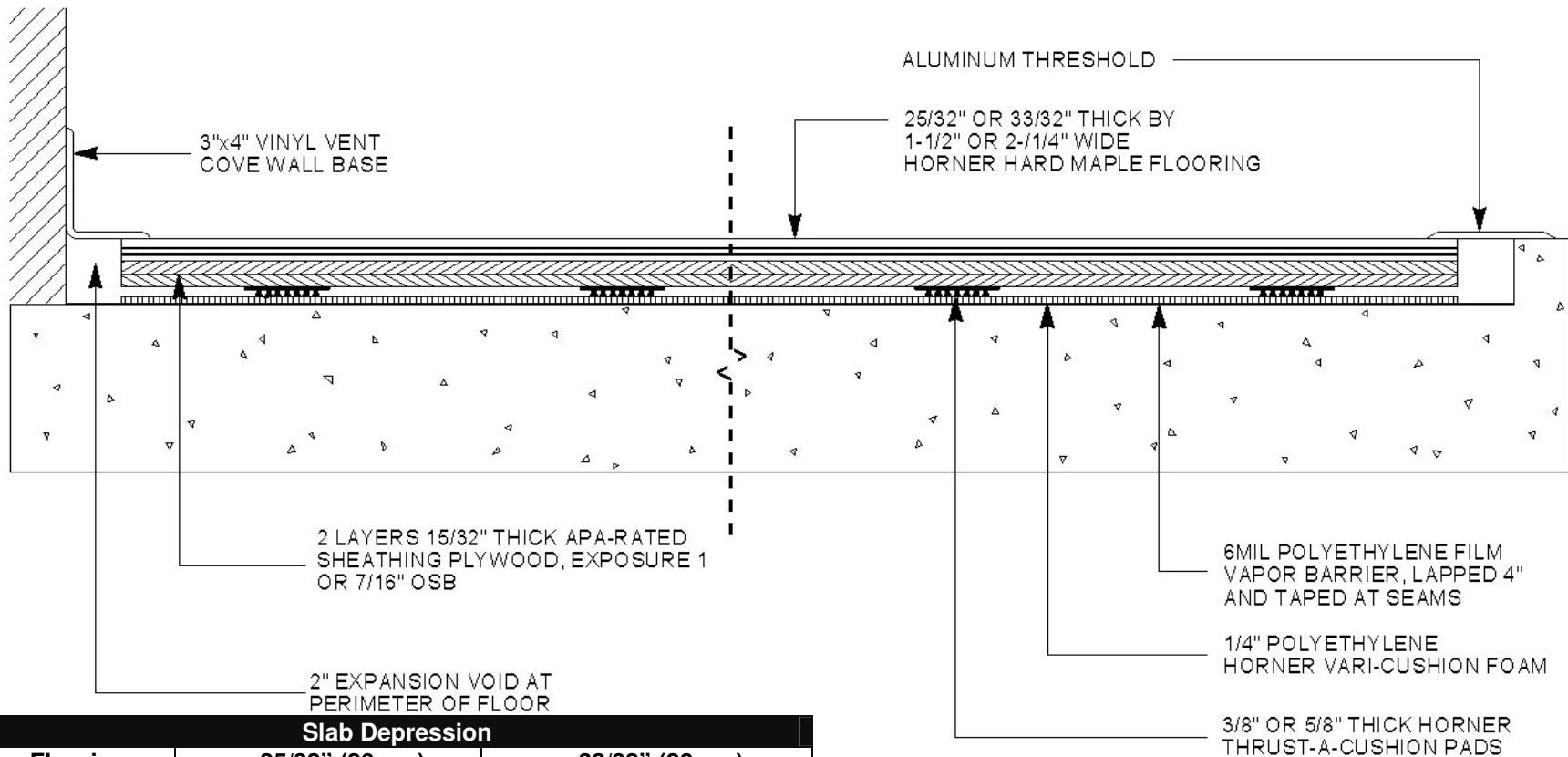
- A. Inspect entire area of floor to insure that surface is acceptable for finishing. completely free from sanding dust and perfectly clean.
- B. Apply seal and finish per manufacturer's instructions.
 - 1. Apply two (2) coats of seal and two (2) coats of finish.
- C. Buff and clean floor between each coat.
- D. Paint game lines as shown on drawings, between seal and first coat of finish.
- E. Game line paint shall be compatible with finish.

3.5 BASE INSTALLATION

- A. Install Vent Cove base, mitering inside corners and anchoring to walls with base cement or screws and anchors.
- B. Use premolded outside corners and mitered inside corners.

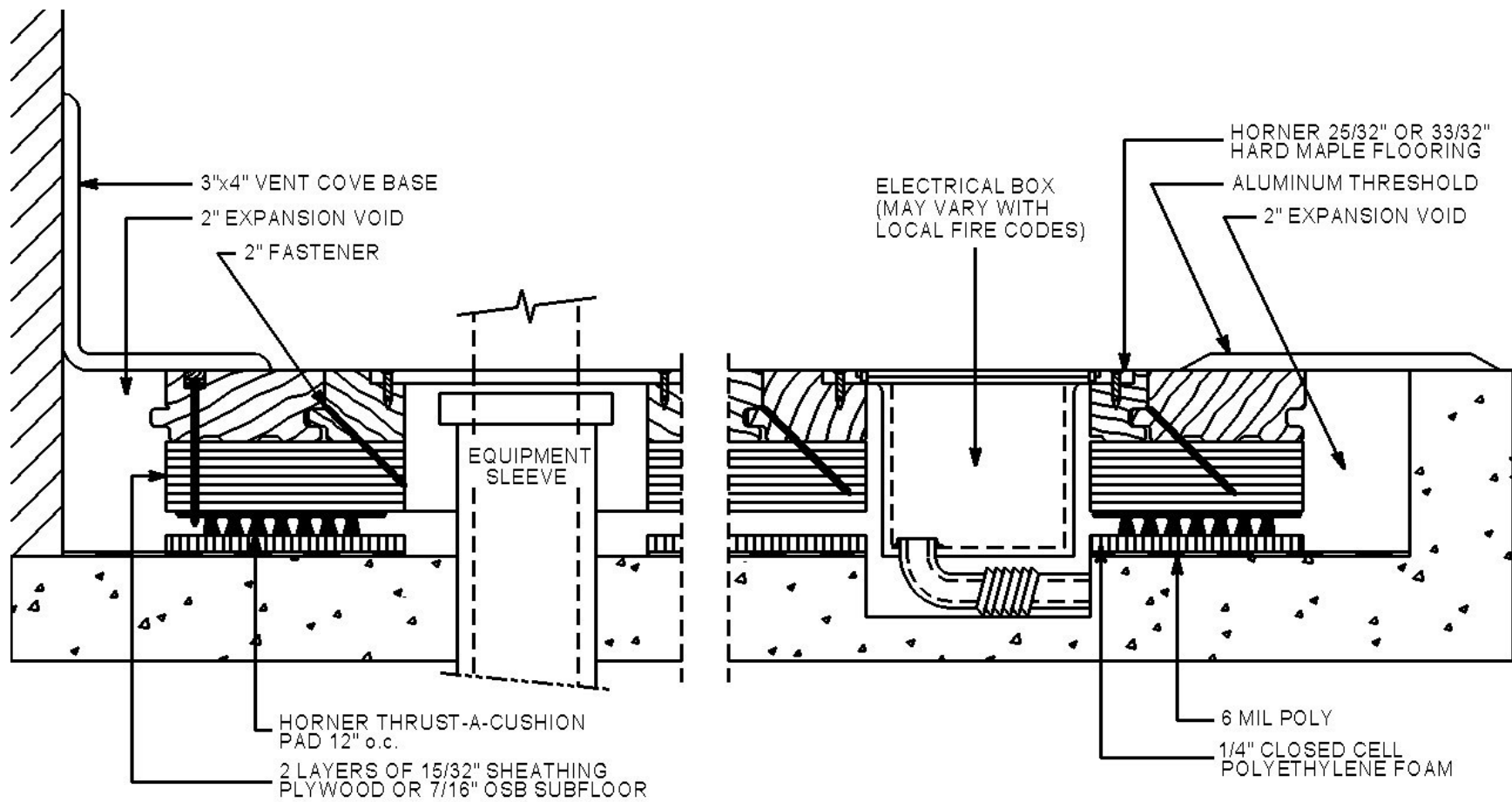
3.6 MAINTENANCE

- A. Upon completion of floor installation, the owner, attendants or individuals in charge and responsible for the upkeep of the building are to see that the care and maintenance instructions of the Horner or MFMA Care Card are followed.



| Slab Depression | | |
|-----------------|------------------------|--------------------------|
| Flooring | 25/32" (20mm) | 33/32" (26mm) |
| 3/8" Pad (10mm) | 2-1/4" (57mm) | 2-1/2" (64mm) |
| 5/8" Pad (16mm) | 2-1/2" (64mm) | 2-3/4" (70mm) |
| Flooring | 5/16" (8mm) Multisport | 11/16" (17mm) Multisport |
| | 2" (51mm) | 2-3/8" (60mm) |

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