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**GAMECOURT® Sandwich System
Seamless Polyurethane “Pad & Pour” Sports Flooring Guide Specification
Division 9 – Indoor Resilient Athletic Surfacing**

PART 1 – GENERAL

1.1 *SECTION INCLUDES*

- A. Supply and installation of the GAMECOURT® indoor resilient multipurpose athletic surfacing.
- B. Application of the game lines.
- C. Related work specified under other sections.
 - 1. CONCRETE MOISTURE VAPOR EMISSION AND pH testing – section 01450
 - a) Vapor emission / moisture testing **MUST** be performed prior to installation of the GAMECOURT® materials. Either the Calcium Chloride or the Relative Humidity (RH) tests may be performed. For the Calcium Chloride test, the vapor emission of the concrete slab should not be greater than 5 lbs. per 1000 SF per 24 hours when tested per ASTM F1869. For the Relative Humidity test, vapor emission must be less than 80% RH when tested per ASTM F2170. If both tests are performed, the higher value must be respected. Concrete subfloor surface pH level must be within the 7 to 8.5 range.
 - 2. CONCRETE SUBFLOORS – SECTION 03__ __
 - a) The general contractor shall furnish and install the concrete sub floors, depressing the slab sufficiently to accommodate the floor system. Slab depression shall be determined by the system thickness selected by the architect.
 - b) The slab shall be steel troweled and finished smooth to a tolerance of 1/8” in any 10’ radius. This tolerance should be measured in accordance with ASTM E1155. The general contractor/construction manager should provide a certificate of compliance with the above recommendations. High spots shall be ground level, and low spots filled in with an approved leveling compound. Filling low spots is cosmetic only, not considered a structural repair. Floor Flatness and floor levelness (FF and FL) numbers are not recognized.
 - c) NO concrete curing agents or hardening / parting compounds shall be applied or mixed with the concrete subfloor. If used, it may be necessary to sand, grind or shot-blast the concrete for the adhesive to bond to the concrete substrate. A bond test is also recommended.
 - d) Cracks, grooves, voids, saw cuts, construction joints, and expansion joints need to be addressed to provide a smooth surface per the architect’s recommendations. Do not use Gypsum based products to fill joints.
 - e) Do not install athletic flooring over new concrete until concrete has been cured and is dry. A minimum of 90 days is required. Typically, a new concrete slab will not meet the vapor emissions requirements listed below unless the slab has been installed and the area is sealed off to outside air (all windows, doors, roof, etc. are installed) for approximately 6 months or more.
 - f) Sub floors shall be clean, dry, and free from dirt, dust, oil, grease, paint, alkali, concrete curing agents, hardening and parting compounds, old adhesive residue or other foreign materials.

3. MEMBRANE WATERPROOFING – SECTION 07_ _ _ _
 - a) Concrete sub floors on or below grade shall be adequately waterproofed beneath and at the perimeter walls and on earth side of below grade walls. It is the responsibility of the architect/engineer to determine the extent of this need.
 4. GAME STANDARD INSERTS – SECTION 11_ _ _ _
- 1.2 *SUBMITTALS*
- A. Product Data:
 1. Submit one (1) set of GAMECOURT® “Sandwich System Guide Specifications”.
 2. Submit one (1) top coat color options chart and one (1) game line paint color options chart.
 - B. Samples:
 1. Submit one (1) sample of specified system, if requested by the architect.
 - C. Closeout Submittals:
 1. Submit one (1) copy of the GAMECOURT® maintenance instructions.
 2. Submit one (1) copy of the GAMECOURT® material and installation warranties as specified.
- 1.3 *QUALITY ASSURANCE*
- A. Qualifications/Certifications
 1. The indoor resilient multipurpose athletic surfacing shall be manufactured in an ISO 9001 certified plant.
 2. The indoor resilient multipurpose athletic surfacing supplier shall be an established firm experienced in the field and appointed as a distributor by the manufacturer of the indoor resilient multipurpose athletic surfacing.
 3. The complete installation of the flooring system shall be carried out by an experienced & certified flooring contractor approved by the supplier and the work shall be performed in accordance with the supplier’s installation instructions.
 5. The indoor resilient multipurpose athletic surfacing materials shall be MADE IN THE USA.
- 1.4 *DELIVERY, STORAGE AND HANDLING*
- A. Delivery:
 1. GAMECOURT® shall not be delivered until all related work is in place and finished and/or proper storage facilities and conditions can be provided and guaranteed stable according to Moose Sport’s Surfaces, Ltd. recommendations.
 - B. Storage:
 1. Store the material in a secure, clean and dry location maintaining a minimum of 55° F and 85° F and under 50% relative humidity. Ideal installation and storage conditions are the same as those which prevail when building is occupied. Store buckets upright and rolls on their side. Do not stack the rolls.
- 1.5 *PROJECT / SITE CONDITIONS*
- A. It is the responsibility of the general contractor/construction manager to maintain clean, secure, weather tight project site conditions acceptable for the installation of the GAMECOURT®
 - B. All windows and doors to be installed prior to installation.
 - C. Concrete slab preparation must be completed per the requirements of athletic flooring material supplier.
 - D. Permanent light and electrical power shall be installed and operating prior to the installation.
 - E. HVAC shall be installed and operating two weeks prior to installation, during and after installation. The temperature must be between 65-70° F., maximum humidity at 70% (50% is preferable).
 - F. Prior to vapor emission / moisture testing, the HVAC must be up and running for a minimum of 72 hours (one week preferable) to condition the building.
 - G. GAMECOURT® shall not be installed until all masonry, painting, plaster, tile, marble and terrazzo work is completed, and overhead mechanical trades and painters have finished in the GAMECOURT® floor areas. All sub-contract work which would cause damage, dirt, dust or interruption of normal installation will be completed prior to the installation of GAMECOURT®. Suspension of other trades’ work may be authorized providing their work will not interfere with the installation or damage the newly installed flooring.

- H. The installation area shall be closed to all traffic and activity for a period to be set by the flooring contractor.

1.6 **WARRANTY**

- A. Moose Sports Surfaces, Ltd. (Moose) hereby warrants its GAMECOURT® materials to be made to manufacturer's specifications and to be free from defects for a period of one (1) year commencing on the date of substantial completion. This warranty shall be given in lieu of all other warranties or guarantees, expressed or implied, including, but not limited to any warranty of merchantability or fitness for a particular purpose, and/or any other obligation on the part of Moose. The liability of Moose shall be limited to repair or replacement of materials supplied by Moose and proven to be defective in manufacture. It shall not include any other damages either direct or consequential.
- B. Warranty excludes damage caused in whole or in part by normal wear and tear, abuse, faulty construction of the building including settlement, lack of a moisture barrier for on grade or below grade construction, the failure of associated trades to adhere to specifications, separation of the concrete slab, any movement of the sub-base, moving/expansion/contraction of construction joints, saw joints, expansion joints, and other saw cuts, excessive dryness or moisture from humidity, spillage, migrations through the slab or wall, or any other source. Additionally, the warranty shall not cover accidental damage.

1.7 **LEED™ CREDIT CONTRIBUTIONS**

- A. GAMECOURT® can contribute to five LEED® rating systems as outlined below.
 - 1. Construction Waste Management (up to 2 points)
 - 2. Recycled Content (up to 2 points)
 - 3. Regional Materials (up to 2 points)
 - 4. Low emitting Materials (up to 3 points)
 - 5. Innovation (up to 5 points)

PART 2 – PRODUCTS

2.1 **SUPPLIER**

- A. The basis of the design for the indoor resilient multipurpose athletic surfacing is Moose Sports Surfaces Ltd., GameCourt®. All other installation accessories and related components must be either made or approved by the indoor resilient multipurpose athletic surfacing supplier. Other products may be approved as equal if deemed qualified and submitted in accordance with the General Conditions.

2.2 **MATERIALS**

- A. GAMECOURT® Primer (if specified or necessary) shall be a one-component polyurethane.
- B. GAMECOURT® Adhesive shall be a two-component polyurethane.
- C. Base mat shall be a prefabricated rubber mat made of all recycled rubber granules bound with MDI polyurethane and manufactured to a constant thickness.
- D. Base mat density – 45 lbs./cu.ft. for normal applications.
- E. Base mat thickness – 4MM – 9MM as specified.
- F. GAMECOURT® Scratch Coat (mat sealer) – two-component, thixotropic polyurethane compound.
- G. GAMECOURT® Wear Coat – two-component, pigmented, self-leveling polyurethane and seamless.
 - 1. Total wear thickness – 2.00MM throughout the floor.
 - 2. Pigmented color: gray (standard).
- H. GAMECOURT® Water-Based Top Coat (matte finish) – two-component polyurethane. Select from standard colors.
- I. GAMECOURT® Game Line Paint – two-component polyurethane. Select from standard colors.
- J. Optional Base (specify or delete) – Vinyl wall base; 4” high; select from standard colors.
- K. Technical Information:
 - 1. Shock Absorption
(DIN 18032/2 min. 51% – cat. 1; min. 45% – cat. 2)

4+2	14.0%
6+2	20.0%

	7+2	21.0%
	9+2	32.0%
2. Impact Resistance at 10° C. (DIN 18032/2 min. of 8 Nm)		> 10 Nm
3. Standard Vertical Deformation (DIN 18032/2 max. 3.5mm – cat. 1; max. 3.0mm – cat. 2)		0.99-2.50mm
4. Rolling Load (DIN 18032/2 1000 N)		1000 N
5. Remaining Indentation/Residual Impression (DIN 18032/2 max. 0.5mm)		0.21 - 0.37 mm
6. Ball Rebound (DIN 18032/2 min. 90%)		99%
7. Sliding Coefficient of Friction (DIN 18032/2 min. 0.4 – max. 0.6)		0.42 - 0.55
8. Area Deflection (DIN 18032/2 – max value 0%)		0%
9. Inflammability of Top Layer (DIN 51960)		Class I / Not flammable
10. <u>Wear Layer Properties:</u>		
Tensile Strength (ASTM D 412)		1548 psi
Elongation at Break (ASTM D 412)		150%
Tear Strength (ASTM D 624)		122 pli
Shore A Hardness		80 Shore A
11. Force Reduction / Shock Absorption (EN 14808) 25-75% (range +/-5 units from the average)	4+2	21%
	6+2	28%
	8+2	35%
12. Vertical Deformation (EN 14809) < or = 5mm	4+2	0.6mm
	6+2	0.9mm
	8+2	1.1mm
13. Resistance to Rolling Load (EN 1569) 1500 N (no deviation > or = 0.5mm under a 300mm straight-edge; no visible damages.		> or = 1500 N; no deviation > or = 0.5mm under a 300 mm straight-edge; no visible damages.
14. Resistance to Impact (EN 1517) > or = 8Nm	7+2	> or = 800 gr @ 10 deg. C
15. Resistance to Indentation (EN 1516) indentation < or = 0.5mm after 24 h unloading.	4+2	0.18mm
	6+2	0.29mm
	8+2	0.38mm
16. Vertical Ball Behavior (EN 12235) > or = 90%		99%
17. Resistance to Wear (EN 2813)	7+2	150mg

PART 3 - EXECUTION

3.1 *EXAMINATION*

- A. It is the responsibility of the general contractor/construction manager to ensure the project/site conditions are acceptable for the installation of GAMECOURT® per Section 1.1 and Section 1.5 of this specification.
- B. Floor contractor to report any discrepancies per Section 1.1 and Section 1.5 to general contractor/construction manager prior to commencement of installation.

3.2 *PREPARATION*

- A. Thoroughly sweep the concrete slab so as to remove all dirt and dust. If a sweeping compound is used, it must be a sweeping compound that does not contain oil or other items that may inhibit the adhesive bond.
- B. Adhere to all SDS requirements for materials employed in the work. Protect all persons from exposure to hazardous materials.

3.3 *INSTALLATION*

- A. Primer: if specified or necessary, apply GAMECOURT® Primer to concrete or asphalt (please specify substrate).
- B. Base Mat:
 - 1. Thoroughly mix the two-component polyurethane GAMECOURT® Adhesive and apply directly to the concrete sub floor with a notched trowel under the rubber base mat per supplier's instructions.
- C. Scratch Coat:
 - 1. Thoroughly mix the two-component GAMECOURT® Scratch Coat and apply per supplier's instructions.
- D. Wear Coat:
 - 1) Thoroughly mix two-component GAMECOURT® Wear Coat and apply per supplier's instructions.
- E. Finish Water-Based Top Coat (Matte Finish):
 - 1. Thoroughly mix two-component polyurethane GAMECOURT® Water-Based Top Coat and apply per supplier's instructions.
- F. Game Lines:
 - 1. Supplier recommends using standard color line paints because they have been thoroughly tested in the lab and in field applications to meet performance standards.
 - 2. Thoroughly mix two-component GAMECOURT® Line Paint and apply per supplier's instructions.
 - 3. Provide game lines as indicated on drawings.
- G. Wall Base (optional) applied per the requirements of the manufacturer.

3.4 *CLEANING*

- A. Remove all excess and waste materials from the area of work. Dispose of empty containers in accordance with federal and local statutes.
 - 1. Refer to GAMECOURT® Care & Maintenance Guide for complete cleaning information.

3.5 *PROTECTION*

- A. Cure Time -- no traffic or trades shall be allowed on the surface for a period of one (1) week following completion to allow for complete and proper cure of the finish.
- B. Cure Time -- no heavy items or heavy installation (i.e. -- 10 row bleachers or above) for a period of four (4) weeks following completion to allow for complete and proper cure of the wear coat layer.
- C. Other Trades -- it is the responsibility of the general contractor to protect the surface from damage by other trades before acceptance by the owner or the owner's authorized agent.
- D. After synthetic floors are installed and the game lines painted, area to be kept locked by general contractor to allow curing time for system. No other trades or personnel are allowed on floor until accepted by owner.

- E. When subjecting the GAMECOURT® floor to significant rolling loads or heavy equipment such as scissor lifts, scaffolding, four wheel dollies, etc. and/or point loads that exceed 250 PSI we recommend the following:
1. Provide a protective cover to prevent marring of the top coat finish. This may be accomplished with 6 mil poly, kraft paper, red rosin paper or standard protective gym covers.
 2. Provide a double layer of 5/8" (minimum) thick plywood or masonite where equipment will travel across the floor system. Plywood may be "walked" across floor as equipment is moved to minimize number of sheets required. The upper and lower layers of the plywood must be staggered to eliminate end joints from aligning thereby reducing point loads to the system.