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**MOOSE PUZZLE TILE
Recycled PUZZLE TILE Specification
Division 9 – Indoor Resilient Athletic Surfacing
Revised 04-3-09**

PART 1 – GENERAL

1.1 *SECTION INCLUDES*

- A. Supply and installation of the MOOSE PUZZLE TILE resilient rubber interlocking tile flooring.

1.2 *SUBMITTALS*

- A. Product Data:
1. Submit one (1) set of MOOSE PUZZLE TILE Specifications".
2. Submit one (1) set of color options.
- B. Samples:
1. Submit one (1) sample of specified color choice.
- C. Closeout Submittals:
1. Submit one (1) copy of the MOOSE PUZZLE TILE maintenance instructions.
2. Submit one (1) copy of the MOOSE PUZZLE TILE material and installation warranties as specified.

1.3 *QUALITY ASSURANCE*

- A. Qualifications:
1. The Moose PUZZLE TILE resilient rubber interlocking tile flooring supplier shall be an established firm experienced in the field and appointed as a distributor by the manufacturer of the Moose PUZZLE TILE resilient rubber interlocking tile flooring.
4. The complete installation of the flooring 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.
- B. Certifications:
1. Installer to submit certification attesting that they are an approved installer of the Moose PUZZLE TILE resilient rubber interlocking tile flooring.

1.4 *DELIVERY, STORAGE AND HANDLING*

- A. Delivery:
1. MOOSE PUZZLE TILE 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 under 50% relative humidity. Ideal installation and storage conditions are the same as those which prevail when building is occupied. Store tiles flat.

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 MOOSE PUZZLE TILE.

- B. 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.
- C. The general contractor shall furnish and install the concrete sub floors, depressing the slab sufficiently to accommodate the floor system. Slab depression shall be the depth of material thickness specified.
- D. No concrete curing or hardening agents shall be applied to concrete sub floor.
- E. The slab shall be steel troweled and finished smooth to a tolerance of 3/16" 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.
- F. Cracks, grooves, voids, cuts and joints may be filled with Ardex Portland-based patching/leveling compounds (or equal). Follow the manufacturer's limitations/recommendations. Moveable joints may have to be treated utilizing specific transitioning joint devices upon the architect's recommendations.
- G. Permanent heat, light and ventilation shall be installed and operating during and after installation.
- H. Do not install resilient rubber interlocking tile flooring with adhesive over new concrete until concrete has been cured and is dry. A minimum of 90 days is required. But, MOST often 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 for approximately 6 months or more.
- I. MOOSE PUZZLE TILE 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 MOOSE PUZZLE TILE floor areas. All sub-contract work which would cause damage, dirt, dust or interruption of normal installation pace will be completed. Suspension of other trades' work may be authorized providing their work will not interfere with the installation or damage the newly installed flooring.
- J. Installation will commence ONLY when the following criteria are met;
 - 1. The building shall be enclosed and weather tight.
 - 2. The temperature must be between 65-70° F., maximum humidity at 70% (50% is preferable), and HVAC must be installed and working two weeks prior to installation, during the installation and after installation.
 - 3. The installation area shall be closed to all traffic and activity for a period to be set by the flooring contractor.
 - 4. 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.
 - 5. Vapor emission testing must be performed before the MOOSE PUZZLE TILE material 100% "glue down" installation begins. The vapor emission levels/moisture content of the concrete slab should not be greater than 5.5 lbs. of vapor per 1000 square feet per 24 hours per ASTM F1869.
 - 6. Concrete subfloor surface pH level must be below 9.
 - 7. The tolerance of the concrete slab is no more than 3/16" in any 10' radius. High spots shall be ground level, and low spots filled in with an approved leveling compound.

1.6 WARRANTY

- A. Moose Sports Surfaces, Ltd. (Moose) hereby warrants its MOOSE PUZZLE TILE materials to be made to manufacturer's specifications and to be free from defects for a period of three years 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, construction joints, saw joints, expansion joints, 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™ CERTIFICATION

- A. MOOSE PUZZLE TILE should be able to help this facility achieve up to seven (7) points towards LEED™ certification.

LEED™ categories positively affected by the indoor resilient multipurpose athletic surfacing

-Materials & Resources	credit reference MR 2.1 & 2.2	Points Attainable 1-2
-Materials & Resources	credit reference MR 4.1 & 4.2	Points Attainable 1-2
-Materials & Resources	credit reference MR 5.1 & 5.2	Points Attainable 1-2
-Indoor Environmental Quality	credit reference EQ 4.1	Points Attainable 1

PART 2 – PRODUCTS

2.1 *MANUFACTURERS*

- A. The basis of the design for the resilient rubber interlocking tile flooring is Moose Sports Surfaces Ltd., MOOSE PUZZLE TILE. All other installation accessories and related components must be either made or approved by the resilient rubber interlocking tile flooring supplier. Other products may be approved as equal if deemed qualified and submitted in accordance with the General Conditions.

2.2 *MATERIALS*

- A. All components for MOOSE PUZZLE TILE shall be supplied by Moose Sports Surfaces, Ltd. All polyurethane component materials shall not contain ANY lead, mercury, nor any heavy metals, PCB, or formaldehyde.
- B. Primer (if specified or necessary) shall be a two-component polyurethane approved by the manufacturer.
- C. Adhesive – if required - shall be a one-component polyurethane approved by the manufacturer.
- D. Moose PUZZLE TILE shall be a prefabricated recycled resilient rubber interlocking tile flooring bound with MDI polyurethane and manufactured to a constant thickness.
1. Technical Information (Test reports supplied upon request):

Shock Absorption (DIN 18032/2 min. 51% – cat. 1; min. 45% – cat. 2) 14+3 (DIN certified with scrim)	51.0%
Tile Dimensions	24" x 24" square
Tile Weight	
6mm	1.25 lb/ft ²
9mm	1.95 lb/ft ²
Standard Tolerances	
Tile Width	+3/4" -0
Thickness	+3mm -3mm
Colors	Manufacturer's standard colors
Tensile Strength ASTM D412	200 lb/in ² Minimum
Flexibility ASTM F137 (1/4" mandrel)	Pass
Static Load ASTM F970 @ 1000 lb/in ²	< 0.020 inch
Coefficient of Friction ASTM 2047	> 0.9
Chemical Resistance ASTM F925	
5% Acetic Acid	No Change
70% Isopropyl Alcohol	No Change
5% Sodium Hydroxide	No Change
5% Hydrochloric Acid	No Change
5% Ammonia	No Change
Bleach	No Change
5% Phenol	No Change

Sulfuric Acid	No change
Ambient Noise Reduction ASTM C423 @ Sabin/ft ²	0.10
Thermal Conductivity ASTM C518 @ BTU-in/hr-ft ² -°F	0.406
Impact Insulation Class ASTM E492	45 minimum
Sound Transmission Coefficient ASTM 413	45 minimum

F. One-component polyurethane adhesive

1. One-component polyurethane moisture cured, non-sag, permanently elastic adhesive that has excellent adhesion to elastomers, concrete and wood and is engineered for indoor and outdoor applications.
2. Technical Information (Test reports supplied upon request):

Adhesive Cure System	Moisture Cured
Weight	
4 gallon unit	58 lbs
2 gallon unit	29 lbs
Color	Medium Grey
VOC Content	0.29 lb/gal (34 g/L)
Freeze/Thaw	stable
Application Temperature	40°F - 100°F
Calcium Chloride Test ASTM F1869	Maximum 5 lbs per 1000 SF in 24 hours
Flashpoint	> 200 °F
Shelf Life	6 months
Working Time	30-40 Minutes
Trowel Size	
Indoor – Concrete or plywood substrate	1/16" square notch
Coverage Rate	
1/16" square notch trowel	95 ft ² per gallon
SCAQMD Rule #1168	0.29 lb/gal (34 g/L)

- G. Optional Base (specify or delete) – Vinyl wall base; 4" high; select from standard colors.

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 MOOSE PUZZLE TILE.
- B. Verify the area in which the MOOSE PUZZLE TILE will be installed is dry and weather tight. Verify that permanent heat, light and ventilation is installed and operable.

- C. Verify all other work that could cause damage, dirt, and dust or interrupt the normal pace of MOOSE PUZZLE TILE installation is completed or suspended.
- D. Verify there is a stable room temperature of at least 65°F.
- E. Verify there is no foreign material or objects on the subfloor and that the subfloor is clean and ready for installation.
- F. If 100% “glue down”, review and document the results of the moisture test to verify the vapor emission levels/moisture content of the concrete slab is not greater than 5.5 lbs. of vapor per 1000 square feet per 24 hours per ASTM F1869.
- G. Verify the concrete subfloor surface PH level is below 9.
- H. Verify that the tolerance of the concrete slab is no more than 3/16” in any 10’ radius. High spots shall be ground level, and low spots filled in with an approved leveling compound
- I. Report any above discrepancies 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. If necessary or specified, sand the entire surface of the concrete slab.
- C. Lightly tack the floor to remove all dirt and dust.
- D. Adhere to all MSDS requirements for materials employed in the work. Protect all persons from exposure to hazardous materials.
- E. Comply with requirements of the resilient rubber interlocking tile flooring material supplier's requirements.

3.3 *INSTALLATION*

- A. Primer: if specified or necessary, apply manufacturer approved primer to concrete or asphalt (please specify substrate).
- B. MOOSE PUZZLE TILE
 - 1. Lay out MOOSE PUZZLE TILE and allow it to relax. Trim to fit.
 - 2. If required, apply adhesive directly to the sub floor with a notched trowel per manufacturer's instructions. Do not allow compression fit at any interlocking seams. Roll MOOSE PUZZLE TILE with an 80-pound linoleum roller.
- C. Wall Base (optional): Install vinyl base anchored to walls with base cement.

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.

3.5 *PROTECTION*

- A. Cure Time -- no traffic or trades shall be allowed on the surface for a period of three (3) days following completion to allow for complete and proper cure of the adhesive.
- B. 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.
- C. After MOOSE PUZZLE TILE has been installed, 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.