

Polyurethane Grade of Semi-Soft or Soft Types with Elastomeric Self-Leveling Smooth Floor, for Multipurpose Hall, Indoor or Outdoor Sport Flooring

**Polyurethane Grade for Outdoor & Indoor # Self-Leveling Smooth/Flat, Semi-Soft Type
VOC Free, Solvent Free**

**Polyurethane Grade for Outdoor & Indoor # Self-Leveling Smooth/Flat, Soft Type
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PART 1: GENERAL

1.01 DESCRIPTION

- A. A multipurpose floor system comprised of a **EPDM & Rubber** base mat laid in adhesive and a two-component polyurethane surface that is field applied in a seamless monolithic application.

1.02 WORK INCLUDED

- A. Furnish necessary material, labor, and equipment required to prepare designated areas and install a **Indoor /Outdoor Sport Flooring** System.

1.03 RELATED WORK

- A. Drawings and general provisions of contract including General and Special Conditions and Division I, excepting special Submittal and Quality Assurance provisions in this section.

1.04 QUALITY ASSURANCE

- A. All system component parts must be supplied by **LaMaCo System Sdn Bhd**, on Flooring Division, Malaysia.
- B. The flooring contractor must be approved by **LaMaCo System Sdn Bhd**, on head office from Malaysia.
- C. Contractor's Qualifications

Installation must be performed by a manufacturer certified contractor with skilled mechanics having not less than three years satisfactory experience in the installation of the type of system as specified in this section, and must be certified in writing by the manufacturer of the **PUR Guard SF Sport Flooring for Indoor/Outdoor** System. Contractor must be in good standing with the **National Association** and have at least three projects of comparable scope.

- D. Floor System Thickness Verification

At the owner's discretion and under his supervision the contractor shall take 1" random cores per 1,000 sq. ft. through the system into the substrate to verify proper system thickness. Cored areas less than specified thickness shall be removed and replaced or increased in thickness by the installing contractor, in a manner that does not affect the performance or integrity of the system. Cored areas which

comply with the recommended system thickness shall be built-up to match the surrounding surface elevation prior to applying the seal coat(s). Cores taken and patched will be noticeable; therefore, cores should be taken from areas where aesthetics are less critical. Cost associate with repair of cored areas that comply with specification thickness are the responsibility of the owner.

1.05 WORKING CONDITIONS

- A. Synthetic materials specified herein 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 synthetic floor area. The building must be reasonably dry; all openings must be closed in; permanent heating and air conditioning installed and working before, during, and after installation.
- B. The general contractor / owner shall provide an area where the stored materials can be maintained at a minimum of 65 degrees and under 80% relative humidity. Ideal installation and storage conditions are the same as those that will prevail when the building is occupied.
- C. Others will provide a concrete sub floor to the flooring contractor finished, steel troweled, and level to 1/8" in any ten-foot radius. High spots shall be ground level and low spots filled with an approved leveling compound. No concrete curing or hardening agents shall be applied to the concrete sub floor. The concrete shall be clean, flat, dry, and free from dirt, dust, oil, grease, paint, alkali, and concrete curing agents, hardening and parting compounds, old adhesive residue, or other foreign materials.
- D. Flooring installation shall not begin until all sub-contract work that would cause damage, dirt, dust, or interruption of normal installation. The installation area shall be closed to all traffic and activity for a period to be set by the flooring contractor.
- E. ENVIRONMENTAL LIMITATIONS
 - 1. Comply with requirements of athletic flooring material suppliers.
 - 2. Adhere to all MSDS requirements for materials. Protect all persons from exposure to hazardous materials.
- F. Protect the work during and after the installation process, until acceptance by the owner or agents.

1.06 WARRANTY

- A. **LaMaCo System Sdn Bhd**, on head office of Malaysia, warrants the material it ships to be free from defects in materials and workmanship for a period of eighteen (18) months, and the flooring contractor warrants the installation of the flooring to be free from defects in materials and workmanship for a period of eighteen (18) months. The exclusive remedy under this warranty shall be replacement of defective material by **LaMaCo System Sdn Bhd**, Malaysia or correction of defective installation by the flooring contractor. All implied warranties of merchantability or fitness for intended use are limited to the period of warranty. This warranty excludes consequential damages.
- B. This warranty does not cover damage caused by fire, winds, floods, chemicals, or other abuse, or by failure of other contractors to adhere to specifications, or neglect of reasonable precautions to provide adequate ventilation during hot, humid weather. This warranty also excludes damage to floors due to ordinary wear and

tear, faulty construction of the building (other than the flooring contractor), separation of the concrete slab underlying the floor, settlement of the walls, or use of unapproved cleaners or sealers on the floor.

- C. In case of a warranty claim, the owner will notify the manufacturer and contractor in writing within **30 days** of the first appearance of problems covered under this warranty. The owner will provide free and unencumbered access to the area during normal working hours for warranty rework. Property protection is also the owner's responsibility. Remedy is limited to direct repair of the **Indoor/Outdoor Sport Floor** System.

1.07 SUBMITTAL

- A. System Data

Submit manufacturer's specifications on cured system and individual components of the **Indoor/Outdoor Sport Floor** System, including physical properties and performance properties and tests described in part 2.01 B and submit Material Safety Data Sheets. Each individual component of the system will be evaluated on the basis of these standards. For any tests not listed in the manufacturer's standard nationally published data, the manufacturer must supply the missing data accompanied by the independent testing laboratory's test results which prove compliance in accordance with the referenced standard(s). Furnish One or Two sets of this information. Manufacturer's standard color chart shall also be submitted and must afford the owner color selection from at least standard colors and computerized custom color matching shall be available upon request. Furnish One or Two sets of this information.

- B. The contractor shall submit a 4" x 8" cured system sample which the contractor has made for verification purposes and finish texture approval.

- C. Contractor Experience

The contractor shall furnish a list of projects using either specified material or equivalent that they have installed during the last Two years. Information shall include: project name, square footage, owner contact name with owner's address and phone number. Also, the contractor shall furnish resumes detailing the experience of key project personnel including supervisors and mechanics.

- D. It is the intention of this Section to provide the products as named. Substitutions will be considered only when received by the Architect, Engineer or Design Professional through a bidding Prime Contractor at least ten days prior to the date set for receipt of bids. Upon receipt of any such submission, the Architect, Engineer or Design Professional will determine whether or not the proposed product is an equal. In the event the Architect, Engineer or Design Professional determines that a proposed system is an approved equal, he will issue an addendum and notify all bidders at least 48 hours prior to receipt of bids. No substitutions will be considered after contract bid date.

- E. The contractor shall submit a copy of the manufacturer's packing slip, tagged for this specific job, along with calculations, signed by an officer of the primary material supplier demonstrating that the quantity of material furnished for the project will achieve the specified coverage and mil thickness.

F. LEED Submittal

Product Data for Credit MR 4.1: For products having recycled content, documentation indicating percentages by weight of post-consumer and pre-consumer recycled content.

Product Data for Credit EQ-4.1: Indicating VOC content measured in grams/liter and compliance with Green of Environmental chemical content.

Include letter of certification from manufacturer that adhesives proposed for use in the Project will comply with requirements of LEED Credit EQ-4.1.

1.08 MATERIAL DELIVERY, HANDING & STORAGE

A. Primary system materials shall be delivered in the manufacturer's undamaged, unopened containers. Each container shall be clearly marked with the following:

- Product name(s) and/or Number(s)
- Manufacturer's name
- Component designation (A, B & C)
- Product Mix Ratio
- Health and Safety Information
- LaMaCo Malaysia [Fax: +60-4-772 4444] Emergency Response Information

B. Provide equipment and personnel to handle the materials by methods which prevent damage.

C. The contractor shall promptly inspect direct jobsite material deliveries to assure that quantities are correct, comply with requirements and are not damaged.

D. The contractor shall be responsible for materials furnished by him, and he shall replace, at his own expense, such materials that are found to be defective in manufacture or that have become damaged in transit, handling or storage.

E. Store material(s) in accordance with manufacturer's instructions, with seals and labels intact and legible. Maintain temperatures within the required range. Do not use materials which exceed the manufacturer's maximum recommended shelf life.

PART 2: PRODUCTS**2.01 MATERIALS**

A. All polyurethane components shall be supplied by **LaMaCo System Sdn Bhd**, on head office of Malaysia.

B. LaMaCo-PUR Sport Floor Primer

Two-component polyurethane primer, shall bond rubber base mat to concrete, asphalt, or wood. It shall be applied at a rate of approximately [2.15/kg/m²].

C. **LaMaCo-PUR Sport Floor**, EPDM or Rubber BASE MAT

1. Base mat shall be prefabricated rubber mat made of all recycled rubber granules bound with MDI polyurethane and a constant thickness. The base mat shall have achieved the density of **[800 kg/m³ or 45-lbs./ft³]**.

LaMaCo-PUR Sport Floor 7112 # EPDM Granules
LaMaCo-PUR Sport Floor 7112 # Rubber Granules
LaMaCo-PUR Sport Floor 7116 # EPDM Granules
LaMaCo-PUR Sport Floor 7116 # Rubber Granules

2. Standard base mat of EPDM or Rubber thickness shall be 4mm, 6mm & 9mm.

PU Adhesive + EPDM/Rubber Granule
Base Mat System, Laying Thickness: 4-9mm, VOC Low & Solvent Free

- C. **LaMaCo-PUR Guard SF 400T**, two-component, Thixotropic Polyurethane compound applied at a rate of **[1.00mm thick require 1.60 kg/m²].**
[2.00mm thick require 3.20 kg/m²].
- D. **LaMaCo-PUR Guard SF 250**, two or three-component, pigmented, Self-Leveling Flat Smooth Polyurethane compound applied monolithically over the base mat to a **[2mm thick require 3.20/kg/m²].**
[3mm thick require 4.80/kg/m²].
Color to be manufacturers standard color.
- E. Game line paint shall be **LaMaCo-PUR Guard Line Paint**, two-component polyurethane.
- F. Optional base (specify or delete). Vinyl wall base; 4" high, select from standard colors.

PART 3: EXECUTION

3.01 INSPECTION

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

3.02 INSTALLATION

Surfaces Preparation

For thorough instructions regarding preparation of concrete substrates consult "Instruction for Concrete Surface Preparation".

Clean substrates of substances, including oil, grease and curing compounds, that might impair **Sport Floor** bond. Provide clean, dry and neutral substrate for application.

Concrete surfaces shall be Mechanically Short Blasting or by Grinding with Scarifying Diamond. Surfaces preparation result should achieve a CSP 3 or CSP 5 profile accordance to International Concrete Repair Institute Guideline No. 03732.

- A. Concrete shall be clean and free of sealers, dirt, oil, paint, and any material that, in the opinion of the flooring installer, will adversely affect the **LaMaCo** material bonding to the concrete or the overall installation (refer to 1.03 Working Conditions).
- B. Thoroughly mix two-component Primer Coat. **LaMaCo-PUR Sport Floor Primer** Two-component polyurethane primer, shall bond rubber base mat to concrete, asphalt, or wood. It shall be applied at a rate of approximately **[1.00mm thick require 2.15/kg/m²]**.
- C. Mix the two-component polyurethane adhesive and apply directly to the concrete sub floor at the specified rate with the specified notched trowel.

**PU Adhesive + EPDM/Rubber Granule
Base Mat System, Laying Thickness: from 4.00-9.00mm**

Please select the below EPDM or Rubber Granules Types

LaMaCo-PUR Sport Floor 7112 # EPDM Granules
LaMaCo-PUR Sport Floor 7112 # Rubber Granules
LaMaCo-PUR Sport Floor 7116 # EPDM Granules
LaMaCo-PUR Sport Floor 7116 # Rubber Granules

- D. Immediately unroll pre-relaxed mat into freshly applied adhesive.
- E. Roll base mat with heavy flat roller.
- F. Thoroughly mix two-component **LaMaCo-PUR Guard SF 400T**, two-component, Thixotropic Polyurethane compound applied at a rate of **[1.00mm thick require 1.60 kg/m²]**.
[2.00mm thick require 3.20 kg/m²].
a flat steel trowel. Allow each coat to cure before proceeding to the next application. After second coat has cured, inspect base mat for ridges and voids. Sand sown ridges, and fill voids as needed.
- G. Thoroughly mix two-component trowel coat, **LaMaCo-PUR Guard SF 250**, two or three-component, pigmented, Self-Leveling Flat Smooth Polyurethane compound applied monolithically over the base mat to a **[2mm thick require 3.20/kg/m²]**.
[3mm thick require 4.80/kg/m²].
Color to be manufacturers standard color. Apply mixed material using recommended notched trowel, or notched squeegee. Materials must be applied continuously to create a seamless surface. Allow topcoat to cure before proceeding to next step. Repair any imperfections in the finished surface. Clean floor with a vacuum, broom, or dry dust mop. Tack clean prior to proceeding.

Using the highest quality masking tape, tape the floor. Thoroughly mix the two-component game line paint, Game line paint shall be **LaMaCo-PUR Guard Line Paint**, two-component polyurethane, and paint between the tape. Remove all tape prior to the paint curing.

If wall base is specified, install vinyl base to walls by using the proper cement.

3.03 CLEAN UP

- A. Clean up all unused materials and debris and remove.

3.04 MAINTENANCE

- A. New floor initial maintenance.

IMPORTANT Allow new floor or newly recoated floor to cure at least 96 hours. Sweep floor thoroughly. Do not use sweeping compounds. Mix **LaMaCo System Sdn Bhd** approved cleaner with clean water to achieve desired water-to-cleaner ratio. Using a new mop, damp mop the entire floor with cleaner/water mix. Allow solution to dry on floor prior to use.

- B. Upon completion of floor installation, the owners, attendants or individuals in charge and responsible for the upkeep of the building are to see that all care maintenance are followed in accordance with **LaMaCo System Sdn Bhd** guidelines. Failure to follow care and maintenance guidelines may void warranty.

External Sport Flooring System only Global Standard

This flooring thickness is total: 11-12mm thick

Primer: 0.8mm +

Cushion Base Mat: 9.00mm +

Elastic Floor: 2.00mm

Item	Products	Thick	Require kg/m2		Unit Price	Amount m2
1	300mm thick of Crusher Run					
2	75mm thick of Asphalt Wearing Course Premix					
3	A 10 # BRC Reinforced A Layer					
4	100mm thick Concrete Grade 25					
5	PUR Sport Floor Primer With Course Silica Sand	0.80mm	2.15	@		
6	PUR Sport Floor 7112 EPDM	9.00mm	11.25			
7	PUR Sport Floor 7112 Rubber	9.00mm	10.80			
8	PUR Sport Floor 7116 EPDM	9.00mm	11.25			
9	PUR Sport Floor 7116 Rubber	9.00mm	10.80			
10	PUR Guard SF 400T	2.00mm	3.20	@		
11	PUR Guard SF 250	2.00mm	3.20	@		
12	PUR Guard Line					

Average of Costing per meter sq:

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