



Pro-Techs Surfacing, LLC v04.2024

1. Product Name

Perma-Play 2-Layer Poured-In-Place Playground Surfacing w/ Aromatic Urethane

2. Manufacturer

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3. Product Description

BASIC USE

Perma-Play 2-Layer Poured-In-Place Playground Surfacing is designed for playgrounds, recreational and fitness areas, etc.

COMPOSITION & MATERIALS

Perma-Play 2-Layer Poured-In-Place Playground Surfacing is a 2-layer system. The Buffing material consists of 100% post-consumer recycled, 3/8" shredded, SBR (styrene butadiene rubber) and high-grade single component aromatic polyurethane. The Wear Course consists of EPDM (Ethylene Propylene Diene Monomer) rubber, with the black being EPDM recycled post-industrial material or SBR (styrene butadiene rubber), ranging in size from 1 – 3 mm, and high-grade single component aromatic polyurethane.

PRODUCT DIMENSIONS:

The fall height of the playground equipment determines the required Buffing thickness to meet ASTM-F1292 compliance. Buffing thicknesses may vary throughout a playground site. Buffing thicknesses are determined by the "Critical Fall Height" requirements through ASTM testing. All ASTM test results are available upon request.

Thicknesses Available

- 0.5" – 0ft. CFH (installed on concrete or asphalt)
- 2.0" – up to 4ft. CFH
- 2.5" – up to 5ft. CFH
- 2.75" – up to 6ft. CFH
- 3.0" – up to 7ft. CFH
- 3.5" – up to 8ft. CFH
- 4.0" – up to 9ft. CFH
- 4.5" – up to 10ft. CFH
- 5.0" – up to 11ft. CFH



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WEAR COURSE THICKNESS:

0.5” thickness nominally (thicker 1” Wear Course available for high traffic areas)

WEAR COURSE COLORS:

* Aliphatic Binder is Recommended

** Not recommended for outdoor or high UV exposure areas

<i>Standard</i>	<i>Standard Plus</i>	<i>Premium</i>
Black	Bright Green*	Blue Grey*
Terracotta Red	Sky Blue*	Purple* **
Green	Signal Green	Primary Red*
Beige*	Pearl White*	Yellow*
Blue*	Light Blue*	Teal*
Eggshell*	Brown	Orange* **
Light Grey*	Gold	
	Light Green*	

LIMITATIONS

Product designed to create safe spaces for children to play, and with the understanding that supervision is the responsibility of the owner/operator and parents, and that due diligence be used when playing on equipment including use of proper footwear and following posted signage.

Pool chemicals from adjacent play areas may affect coloration of the rubber safety surface over time. This condition, should it occur, is not considered to be a product failure.

Ambering, which is a slight yellowing of the rubber Wear Course, may be noticeable in some colors when using standard aromatic polyurethane binders. This effect is more pronounced in certain colors and is a common occurrence in the pour-in-place rubber safety surface industry. An aliphatic binder is available at a higher cost and can greatly minimize the ambering effect. For lighter colors that are more affected by ambering, both binders can be used on a project to balance aesthetics and cost. For more information on ambering and how to minimize its effects, please consult Pro-Techs Surfacing, LLC (PTS). [Reference our ambering exhibit here.](#)



4. Technical Data

APPLICABLE STANDARDS

ASTM International

- ASTM C67 Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile
- ASTM C501 Standard Test Method for Relative Resistance to Wear of Unglazed Ceramic Tile by the Taber Abraser
- ASTM D412 Standard Test Methods for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers-Tension
- ASTM D624 Standard Test Methods for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers
- ASTM D395 Standard Test Methods for Rubber Property - Compression Set
- ASTM D2047 Standard Test Method for Static Coefficient of Friction of Polish-Coated Flooring Surfaces as Measured by the James Machine
- ASTM D2859 Standard Test Method for Flammability of Finished Textile Floor Covering Materials
- ASTM E303 Standard Test Method for Measuring Surface Frictional Properties Using the British Pendulum Tester
- ASTM F1292 Standard Specification for Impact Attenuation of Surface Systems Under and Around Playground Equipment
- ASTM F1951 Standard Specification for Determination of Accessibility of Surface Systems Under and Around Playground Equipment
- ASTM F3351 Standard Test Method for Playground Surface Impact Testing in Laboratory at Specified Test Height

PHYSICAL/CHEMICAL PROPERTIES

- **Shock Attenuation (ASTM F1292)**
 - Gmax - Less than 200
 - Head Injury Criteria – 1000 or less
- **Shock Attenuation (ASTM F3351)**
- **Accessibility (ASTM 1951-14)**
 - Straight Baseline Propulsion – 5.53 lbs. Work/ft-Force
 - Turning Baseline Propulsion – 7.23 lbs. Work/ft-Force
- **Tensile Strength (ASTM D412)**
 - PSI – 96.4
 - Elongation - 74%
 - Lbs/Force – 32.3
- **Tear Resistance (ASTM D624) – 37.3 PSI**
- **Dry Static Coefficient of Friction (ASTM D2047) - 0.7scof**
- **Wet Static Coefficient of Friction (ASTM D2047) – 0.8scof**
- **Wet Skid Resistance (ASTM E303)**
 - Initial Dry 100.8 BPN Avg
 - 90 Degree Dry 103.0 BPN Avg

**ATHLETIC AND RECREATIONAL SURFACES 02790**

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- Initial Wet 49.5 BPN Avg
- 90 Degree Wet 50.8 BPN Avg
- **Flammability (ASTM D2859) – Pass**
- **Water Permeability (ASTM F1551-03)**
 - Time (seconds) = 4.8
 - Gal/min/yd² = 417.9
 - Rainfall Capacity (inches/hour) = 1,282.2
- **Compression (ASTM D0395) = 3.9% Avg**
- **Resistance to Wear (ASTM C501) = 0.79% Avg Weight Loss**
- **Resistance to Wear (ASTM C67) = No deterioration of various thickness samples**

ENVIRONMENTAL CONSIDERATIONS

This system makes extensive use of recycled tire rubber as a major component.

Required mix proportions by weight:

Buffing – 16% polyurethane, 100# rubber

Wear Course – 24 - 26% polyurethane, 100# - 110# rubber

5. Installation**PREPARATORY WORK**

EPDM Rubber materials should be protected from exposure to harmful environmental conditions, including moisture. Install surfacing system when minimum ambient temperature is 50 degrees F and maximum ambient temperature is 95 degrees F. Pro-Techs Surfacing, LLC (PTS) may, at its sole discretion, choose to commence a cold weather installation on projects less than 1000 sf in size, or in light precipitation. This decision is solely at the discretion of Pro-Techs Surfacing and will not affect the standard product warranty. Hold Harmless required for installation against PTS advice.

SUBSTRATE PREPARATIONCompacted Stone Base

Substrate must be in accordance with PTS Compacted Stone Base Installation Instructions before Perma-Play 2-Layer Poured-In-Place Playground Surfacing can be applied. [Reference our compacted stone subbase exhibit here](#)

Asphalt Substrate

New asphalt substrates must be allowed to cure for a minimum of 30 days before Perma-Play 2-Layer Poured-In-Place Playground Surfacing can be applied. The top course of asphalt must be road grade material and of sound integrity.



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Concrete Substrate

New concrete substrates must cure for a minimum of 10 days before Perma-Play 2-Layer Poured-In-Place Playground Surfacing can be applied. Concrete substrate required for Mounds receiving surfacing system.

NOTE: Proper drainage is crucial to the longevity of the Perma-Play 2-Layer Poured-In-Place Playground Surfacing. Inadequate drainage will cause premature breakdown of the product in affected areas potentially voiding warranty coverage in whole or in part. [Reference our drainage exhibit here.](#)

BASIC METHODOLOGY

Installation

Perma-Play 2-Layer Poured-In-Place Playground Surfacing cannot proceed until all applicable site work, including substrate preparation, fencing, playground equipment installation and other relevant work, has been completed and approved by a PTS representative.

Buffing Primer

Using a bristle brush or 3/8" nap roller, apply ample urethane primer to all curbing and/or vertical substrates, with which the rubber surfacing system will contact.

Buffing Installation

Using screed sticks and gauge poles, install the Buffing rubber materials to 1/8" – 1/4" higher than required thickness. Using pool trowels, pull the Buffing material together using consistent pressure throughout, and roll edges where running flush to adjacent substrates. Repeat the process until all areas, including use zones, comply with the architectural plans and specification requirements. Allow Buffing to cure for sufficient time such that indentations are not left in the Buffing material. PTS Representative must verify that the Buffing has cured sufficiently before applying the finished topcoat.

Wear Course Primer

Using a bristle brush or 3/8" nap roller, apply urethane binder to the existing curbing and any other vertical structures within the installation areas, and/or to the Buffing material around the perimeter of the topcoat area for rolled edge detail, at a requisite width determined by the edge detail.

Wear Course Installation

Screed the EPDM wear course rubber granules to a nominal 5/8" thickness to allow for compaction. Using a pool trowel, pull together material using consistent pressure throughout to produce the end result of 3/8"- 5/8" thickness. Any area equaling or in excess of 2,500 square feet may be seamed as deemed necessary by PTS. Any area less than 2,500 square feet will be completed seamlessly as conditions allow.



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NOTE – Allow Wear Course to cure for 48 hours to 72 hours contingent on the humidity and temperature. Protect newly installed Wear Course from foot traffic or equipment usage until the Perma-Play 2-Layer Poured-In- Place Playground Surfacing has fully cured. PTS suggests security fence in areas that lack normal supervision. Complete installation recommendations are available from a PTS representative. Failure to follow these may result in a voidance of warranty coverage in whole or in part.

6. Warranty

Standard warranty period for Perma-Play 2-Layer Poured-In-Place Playground Surfacing is for 5 years from completion of installation. Contact PTS for 7 year or 10 year warranty options. It is the owner/operators responsibility to routinely inspect, maintain, and repair the playground surfacing, including the obligation to promptly notify if conditions exist triggering notice as detailed in the warranty documents.

7. Maintenance/Cleaning – Outdoor & Indoor Applications

As a precautionary maintenance measure, only Dawn Dishwashing liquid, Simple Green, or Simple Green d Pro 3 PLUS (disinfectant at the recommended dilution rate of 2oz per 1gal), can be used to clean Perma-Play 2-Layered Poured-In-Place Playground Surfacing and similar rubber safety surfaces.

Outdoor Applications -

Using a standard leaf blower or broom, remove any lightweight debris such as leaves, trash, etc. Using a watering hose, rinse off all excess debris from the surface. While surface is wet, apply the cleaning agents noted above and agitate lightly with a soft bristle brush. Repeat as necessary. Once clean, final rinse with low-pressure water from a hose to remove any excess cleaning agents.

Indoor Applications –

Using a standard vacuum cleaner/shop vac, or broom, remove any light weight unwanted debris. Apply cleaning agents noted above and agitate lightly with a soft bristle brush or mop. Repeat as necessary. Once clean, final mop with clean hot water to remove any excess detergent. Be sure to not saturate the mop head. Mop head should be damp at most.



8. Playground Inspection and Maintenance Program Responsibilities

Designer/owner/operator of playground shall retain all liability related to supervision and/or maintenance responsibilities recommended by the applicable American Society for Testing and Materials, National Recreation Park Association, and Consumer Product Safety Commission standards regarding Public Use of Playground Equipment, including the labeling and/or signage pertaining to the entanglement hazards of helmets, drawstrings and accessories around the neck, hot/hard play equipment/surfacing, and the recommendation for proper footwear when playing in area. Owner/operator shall make periodic inspections to maintain and repair the impact attenuating surfacing within the use zone and establish and maintain detailed written inspection, maintenance, and repair records for each public use playground equipment area. For guidance on documenting these inspections please see the Pro-Techs [**PTS PLAYGROUND SURFACING HIGH FREQUENCY \(MAINTENANCE\) INSPECTION FORM**](#) and for recommendations on the frequency of these inspections please refer to the [**IPSI Guide to Frequency of Inspection Form**](#). Consult with your PTS Representative with any questions.

9. Technical Services

Pro-Techs Surfacing, LLC., works closely with the contractor to ensure the site is prepared and the installation is on schedule. For technical assistance, contact us.

10. Quality Assurance

Qualifications

Utilize an installer certified and trained by the manufacturer of playground surfacing system, having experience with other projects of the scope and scale of the work described in this section.

PTS is International Play Equipment Manufacturers Association (IPEMA) Certified.

Field Supervisor to be present onsite who is employed by the manufacturer as a W2 payroll employee, must be CPSI and Triax Trained, and an OSHA30 card holder to ensure safety and quality control for projects that exceed a contract value greater than \$100,000.