

Rubber Designs Rubber Bond Poured-In-Place 3-Part Specification

Part 1: General

1.1 Summary

Specifier Note: Revise paragraph below to suit project requirements. If a reader of this section could reasonably expect to find a product or component specified in this section, but it is actually specified elsewhere, then the related section number(s) should be listed in the paragraph below. In the absence of related sections, delete paragraph below.

Specifier Note: Site materials and methods, drainage, playground equipment, fencing, substrate preparation and similar work is provided by others and is described in other sections. Consult manufacturer for specific substrate preparation requirements. Edit, retain or delete paragraph below to suit project requirements and specifier practice.

1.2 References

- A. American Society for Testing and Materials (ASTM):
1. ASTM D412 Standard Test Methods for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers-Tension.
 2. ASTM D624 Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers.
 3. ASTM D2047 Standard Test Method for Static Coefficient of Friction of Polish-Coated Floor Surfaces as Measured by the James Machine.
 4. ASTM D2859 Standard Test Method for Flammability of Finished Textile Floor Covering Materials.
 5. ASTM E303 Standard Test Method for Measuring Surface Frictional Properties Using the British Pendulum Tester.
 6. ASTM F1292 Standard Specification for Impact Attenuation of Surface Systems Under and Around Playground Equipment.
 7. ASTM F1951 Standard Specification for Determination of Accessibility of Surface Systems Under and Around Playground Equipment.

Specifier Note: Article below should be restricted to statements describing design or performance requirements and functional (not dimensional) tolerances of a complete system. Limit descriptions to composite and operational properties required to link components of a system together and to interface with other systems.

1.3 System Description

- A. Performance Requirements: Provide a single layer rubber-urethane playground surfacing system which has been designed, manufactured, and installed to meet the following criteria:
1. Shock Attenuation (ASTM F1292):
 - a. Gmax: Less than 200.
 - b. Head Injury Criteria: Less than 1000.
 2. Flammability (ASTM D2859): Pass.

3. Tensile Strength (ASTM D412): 60 psi (413 kPa).
4. Tear Resistance (ASTM D624): 140%.
5. Water Permeability: 0.4 gal/yd²/second.
6. Accessibility: Comply with requirements of ASTM F1951.

1.4 Submittals

- A. General: Submit listed submittals in accordance with Conditions of the Contract.
- B. Product Data: Submit manufacturer's product data and installation instructions.
- C. Verification Samples: Submit manufacturer's standard verification samples of x
- D. Quality Assurance/Control Submittals: Submit the following:
 1. Certificate of qualifications of the playground surfacing installer.
- E. Closeout Submittals: Submit the following:
 1. Warranty documents specified herein.

Specifier Note: Article below should include statements of prerequisites, standards, limitations, and criteria that establish an overall level of quality for products and workmanship.

1.5 Quality Assurance

- A. Qualifications: Utilize an installer approved and trained by the manufacturer of the playground surfacing system, having experience with other projects of the scope and scale of the work described in this section.
- B. Certifications: Certification by manufacturer that installer is an approved applicator of the playground surfacing system.

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1.6 Delivery, Storage & Handling

- A. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
- B. Storage and Protection: Store materials protected from exposure to harmful environmental conditions and at a minimum temperature of 40 degrees F (4 degrees C) and a maximum temperature of 90 degrees F (32 degrees C).
- C. Specifier Note: In article below, state physical or environmental limitations or criteria for installation such as weather, temperature, humidity, ventilation or illumination required for proper installation or application.

1.7 Project/Site Conditions

- A. Environmental Requirements: Install surfacing system when minimum ambient temperature is 40 degrees F (1 degree C) and maximum ambient temperature is 90 degrees F (32 degrees C). Do not install in steady or heavy rain, standing water, muddy conditions or in any adverse conditions where the polyurethane would be affected.

1.8 Warranty

- A. Project Warranty: Refer to Conditions of the Contract for project warranty provisions.
- B. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under contract documents.

- C. Proper drainage is critical to the longevity of the Rubber Designs Bonded Rubber Poured-in-Place surfacing system. Inadequate drainage will cause premature breakdown of the poured system in affected areas; and void the warranty.

Specifier Note: Coordinate subparagraph below with manufacturer's warranty requirements.

- a. Warranty Period: 7 years (when aromatic urethane for the top surface is specified): 7 years from date of completion of work. Extreme-10 (when aliphatic urethane for the top surface is specified): 10 years from date of completion of work. 2 years from date of completion of work when surface is in water play areas, pool surrounds or similar applications.

Part 2: Products

2.1 Rubber Designs Poured-In-Place Playground Surfacing System

- A. Manufacturer: Rubber Designs
3125 Skyway Circle
Melbourne, FL 32934
Telephone: (888)-653-7529, (706)383-7528
Fax: (706)334-2403
www.RubberDesigns.com
- B. Proprietary Products/Systems. Rubber Designs Rubber Poured-In-Place playground surfacing system, including the following:
 - 1. Rubber Designs Bonded Poured-In-Place:
 - i. Material: Polyurethane.
 - ii. Material: Blend 100% recycled SBR (styrene butadiene rubber) and urethane.

Specifier Note: The type of playground equipment determines the required thickness, and the thickness may be different at various locations on the playground site. Depending on ASTM F1292 requirements for critical fall height (4', 5', 6', 7', 8', 9' or 10' Specify project requirements below and coordinate with working drawings.

- a. Thickness: [1 1/2"] [2"] [3"] [3 1/2"] [4"].
- b. Color: [Standard Combination - 50% Terra Cotta Red / 50% Black] [Standard Combination - 50% Beige / 50% Black] [Standard Combination - 50% Hunter Green / 50% Black] [Standard Combination - 50% Royal Blue / 50% Black] [Terra Cotta Red] [Primary Red] [Orange (indoor only)] [Pink] [Gold] [Beige] [Yellow] [Bright Green] [Army Green] [Hunter Green] [Teal] [Sky Blue] [Royal Blue] [Purple] [Pearl] [Eggshell] [Brown] [Light Gray] [Dark Gray] [Black][Custom color (specify requirements)].

Specifier Note: Aliphatic urethane (Extreme-10) is recommended for certain colors (blue, teal, purple, pearl, eggshell and grays) because aromatic binder (Super-7) "yellows" slightly upon exposure to ultraviolet rays. Most of this thin layer of urethane wears off with foot traffic and weathering typically within two to six months. This characteristic applies industry-wide.

- c. Dry Static Coefficient of Friction (ASTM D2047): 1.0.
- d. Wet Static Coefficient of Friction (ASTM D2047): 0.9.
- e. Dry Skid Resistance (ASTM E303): 89.
- f. Wet Skid Resistance (ASTM E303): 57.

Specifier Note: Edit Article below to suit project requirements. If substitutions are permitted, edit text below. Add text to refer to Division 1 Project Requirements (Product Substitutions Procedures) Section.

2.2 Product Substitutions

- A. Substitutions: No substitutions permitted.

Specifier Note: Specify proportions and procedures for site mixing materials. Mixing is the preparation of materials for use and is considered to be part of the manufacturing process.

2.3 Mixes

- A. Required mix proportions by weight:
 - a. Basemat: 16+% urethane (as ratio: 14% urethane divided by 86% rubber). 14% urethane, 86% rubber (based on entire rubber & urethane mix).
 - b. Top Surface: 22% urethane (ratio: 18% urethane divided by 82% rubber). 18% urethane, 82% rubber (based on entire rubber & urethane mix).

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Part 3: Execution

Specifier Note: Revise article below to suit project requirements and specifier's practice.

3.1 Manufacturer's Instructions

- A. Comply with the instructions and recommendations of the playground surfacing manufacturer.

Specifier Note: Specify actions to physically determine that conditions are acceptable to receive primary products of the section.

3.2 Examination

- A. Substrate preparation must be in accordance with surfacing manufacturer's specification. New asphalt must be fully cured - up to 30 days. New concrete must be fully cured - up to 7 days.
- B. Proper drainage is critical to the longevity of the Play Bound Poured-in-Place surfacing system. Inadequate drainage will cause premature breakdown of the poured system in affected areas; and void the warranty.

Specifier Note: Specify actions required to physically prepare the surface, area, or site or to incorporate the primary products of the section.

3.3 Preparation

- A. Surface Preparation: Using a brush or short nap roller, apply primer to the substrate perimeter and any adjacent vertical barriers such as playground equipment support legs, curbs or slabs that will contact the surfacing system at the rate of 300 ft²/gal (7.5 m²/L).

Specifier Note: Coordinate article below with manufacturer's recommended installation requirements.

3.4 Installation

- A. Do not proceed with playground surfacing installation until all applicable site work, including substrate preparation, fencing, playground equipment installation and other relevant work, has been completed.
- B. Basemat Installation:
- C. Using screeds and hand trowels, install the basemat at a consistent density of 29 pounds, 1 ounce per cubic foot (466 kg/m³) to the specified thickness.
- D. Allow basemat to cure for sufficient time so that indentations are not left in the basemat from applicator foot traffic or equipment.
- E. Do not allow foot traffic or use of the basemat surface until it is sufficiently cured.
- F. Primer Application: Using a brush or short nap roller, apply primer to the basemat perimeter and any adjacent vertical barriers such as playground equipment support legs, curbs or slabs that will contact the surfacing system at the rate of 300 ft²/gal (7.5 m²/L).
- G. Top Surface Installation:
- H. Using a hand trowel, install top surface at a consistent density of 58 pounds, 9 ounces per cubic foot (938 kg/m³) to a nominal thickness of 1/2" (12.7 mm).
- I. Allow top surface to cure for a minimum of 48 hours.
- J. At the end of the minimum curing period, verify that the top surface is sufficiently dry and firm to allow foot traffic and use without damage to the surface.
- K. Do not allow foot traffic or use of the surface until it is sufficiently cured.

Specifier Note: Specify provisions for protecting work after installation but prior to acceptance by the owner. Coordinate article below with Division 1 Execution Requirements Section.

3.5 Protection

- A. Protect the installed playground surface from damage resulting from subsequent construction activity on the site.