

No Fault Safety Surface for Playgrounds

Product Specification

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EPDM POURED-IN-PLACE RUBBER SURFACING for PLAYGROUNDS

PART 1 – GENERAL

1.01 WORK INCLUDED

This work includes furnishing and installing the No Fault Safety Surface. The surfacing manufacturer/installer shall be responsible for all labor, materials, tools, and equipment to perform all work and services for the installation of the surface.

1.02 DESCRIPTION OF SYSTEM & GENERAL CONDITIONS

No Fault Safety Surface shall be poured-in-place and trowelled to provide for a resilient, seamless rubber surface installed over the specified rigid base. No Fault Safety Surface is comprised of an SBR rubber impact attenuation layer and an EPDM color wear layer, with both layers being mixed with a non-flammable, non-shrinking, one part moisture cured polyurethane adhesive as recommended by the manufacturer and capable of bonding to concrete, asphalt, or compacted stone. No Fault Safety Surface shall be stable and slip resistant to comply with, meet or exceed all requirements set forth in the Americans with Disabilities Act (ADA), the American Society for Testing Materials (ASTM International) and the Consumer Product Safety Commission (CPSC) for manufactured safety surfaces as detailed below.

1.03 QUALITY ASSURANCE

Safety Surface shall meet or exceed the following performance requirements:

A. Applicable Standards (Test Results & Certifications):

1. Impact Attenuation - ASTM F1292: Surface system that is within the use zone of the surrounded playground equipment shall be tested in accordance with most current ASTM Specification F1292 and shall meet or exceed the performance requirements of ASTM F1292, CPSC and/or CSA Z614. Thus, surface system shall exhibit a head injury criterion (HIC) not exceeding 1000 and a value of acceleration recorded during an impact (g-max) not exceeding 200 from a fall height at or greater than the critical fall height of the installed play equipment structure as determined by the playground equipment manufacturer and/or as shown on drawings.
2. Coefficient of Friction & Permeability - ASTM D2047
3. Surface Frictional Properties & Skid Resistance – ASTM E303
4. Flammability of Finished Floor Cover - ASTM D2859
5. Accessibility of Surface Systems – ASTM F1951
6. Tear Strength – ASTM D624 Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic
7. Tensile Strength – ASTM D412 Standard Test Methods for Vulcanized Rubber Elastomers and Thermoplastic Elastomers
8. Solar Reflective Index (SRI) – ASTM E1980 and ASTM E903
9. IPEMA Certification Required: International Play Equipment Manufacturers Association (IPEMA) provides a Third-Party Certification Service whereby a designated independent laboratory validates a surfacing manufacturer's certification of conformance to the most current ASTM F1292 Standard Specification for Impact Attenuation Under and Around Playground Equipment. A list of manufacturers and certified products can be validated at www.ipema.org.

B. Installer Qualifications

1. All materials under this section shall be installed by the manufacturer's certified installers. The playground surface installation shall not be performed by anyone other than the product manufacturer's certified installers.
2. The installation crew shall include at least one member that has completed the OSHA (10+) Training course and received certification.

C. Contractor Pre-Qualifications

1. A list of project references completed with a similar application. The list shall include the name and contact information of the project representative at the time of the original installation.
2. All bidders must also submit Material Safety Data sheets (MSDS) and Product Data Sheets on all materials.
3. Insurance Requirements - All bidders must carry minimum insurance of:
 - a) \$1,000,000 General Liability Per Occurrence
 - b) \$2,000,000 General Aggregate
 - c) \$2,000,000 Products Completed Operations
 - d) \$5,000,000 Excess Liability
 - e) \$1,000,000 Workers Comp. & Employers Liability
 - f) \$1,000,000 Automobile Liability (any Auto)

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1.04 SUBMITTALS

- A. One (1) digital submittal package shall be supplied upon request.
- B. Manufacturer's descriptive data and installation instructions.
- C. Manufacturer's details showing depths of wear surface and sub-base materials, anchoring systems, and edge details.
- D. A list of all materials and components to be installed, including manufacturer's name, storage requirements, and precautions, and shall include chemical composition and test results to which material has been subjected in compliance with these specifications.
- E. Test results to substantiate that the product meets or exceeds all ASTM & ADA requirements for each standard listed in Section 1.03 Quality Assurance. Test must be performed and certified by an independent laboratory.
- F. Copy of IPEMA Certification.
- G. Documentation of Contractor Pre-Qualification as stated in Section 1.03 Quality Assurance.
- H. Documentation of Insurance Requirements as stated in Section 1.03 Quality Assurance.
- I. Statement signed by the manufacturer of the synthetic safety surfacing attesting that all materials under this section shall be installed by the manufacturer or its Certified Installers.
- J. Upon request, reference list to include a listing of installations where similar applications have been installed and have been in successful service for a minimum period of three (3) years. This list shall include name and contact information for project representative at time of original installation.
- K. Upon request, a sample specimen of safety surface proposed for this project.
- L. Upon request, a list of all organizations and affiliations of the company offering the product(s).

1.05 DELIVERY, STORAGE and HANDLING:

Materials and equipment shall be delivered and/or stored in accordance with the manufacturer's recommendations.

1.06 PROJECT SITE CONDITIONS:

- A. Synthetic safety surfacing shall be installed on a dry subsurface, with no prospect of rain within the initial drying period, at temperatures recommended by the manufacturer.
- B. Installation in weather condition of extreme heat, temperatures less than 50 degrees (F), and/or high humidity may impact cure time, and/or the structural integrity of the final product. The immediate surroundings of the site shall be free of dust conditions and poor particulate air quality will impact the final surface look.
- C. The playground surface installation manager shall reserve the right to control the project schedule installation based on such factor without penalty to No Fault, LLC.
- D. Safety surfacing shall be installed after the playground equipment unless otherwise noted.
- E. The project manager or designated individual of playground equipment and sub-base installation shall coordinate Surface installation, with No Fault's local production manager and in accordance with No Fault's sub-base requirements.

1.07 WARRANTY:

Surfacing shall be guaranteed against defects in workmanship and material for a period of no less than five (5) years or as specified and agreed upon per contract.

PART 2 – PRODUCTS

Product shall be No Fault Safety Surface as manufactured, installed and distributed by No Fault, LLC |800-232-7760| or www.nofault.com.

NOTE – Other products will be allowed only if prior approved as per Section 2.02 Product Substitutions & Approved Equals

2.01 MATERIALS

- A. Polyurethane Binder
 - 1. Polyurethane binder for safety surfacing shall be specifically designed for use with rubber granule material for outdoor installations.
 - 2. No Toluene Diphenyl Isocyanate (TDI) shall be used.
 - 3. No filler materials shall be used in urethane such as plasticizers and the catalyzing agent shall contain no heavy metals.
 - 4. Weight of polyurethane shall be no less than 8.5 lbs/gal (1.02 Kg/1) and no more than 9.5 lbs/gal (1.14 Kg/1)
 - 5. COLOR TINTED BINDER WILL NOT BE ALLOWED.

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6. Aromatic or Aliphatic Polyurethane Binder shall be acceptable based on the surface manufacturer's recommendation (see SECTION 3.03 Installation).
7. Aromatic Binder shall be standard for all applications unless stated otherwise at time of bid.
- B. SBR (Impact Layer)
 1. Only 100% shredded styrene butadiene rubber may be used.
 2. Strands of SBR may vary from 0.5 mm – 2.0 mm in thickness by 3.0 mm – 20 mm in length.
- C. EPDM (Wear Surface)
 1. EPDM particles shall meet requirements of ASTM D-412 and CSA Z614-98 for tensile strength and elongation; and ASTM D 2240 (Shore A) hardness of 55-65, not less than 26 percent rubber hydrocarbons.
 2. EPDM shall be peroxide cured with an EPDM content of 26% and shall include a processing aid to prevent hardness with 26% poly content to maintain dynamic testing characteristics, weatherization, and UV stability.
 3. Size of rubber particles shall be not less than 1.0 mm, or greater than 3.0 mm across with a minimum EPDM content of 25% by weight and certified letter from manufacturer stating this content. All rubber shall remain consistent in gradation and size.
 4. STRAND, SHAVED, CHIPPED OR SHREDDED RUBBER IS NOT ACCEPTABLE IN THE POURED CAP.

2.02 PRODUCT SUBSTITUTIONS & APPROVED EQUALS

- A. All product substitutions must be submitted for preapproval at least fourteen (14) days prior to bid opening date. A complete submittal package, as outlined in Section 1.04 Submittals, must be provided before a substitute product will be considered for preapproval. If the product submitted for preapproval cannot meet all requirements of the submittal package, it will not be considered.
- B. Once all products submitted for substitution have been reviewed, a list of the approved substitutes will be circulated and made available to bidders.

PART 3 – EXECUTION

3.01 SUB-BASE REQUIREMENTS

- A. Owner or Owner's representative shall provide sub-surface in accordance with manufacturer's recommendation for the project location and application.
- B. The base shall be concrete, asphalt, or compacted stone installed in accordance with manufacturer's written specifications.
- C. PIP surface application is porous and subsurface with positive drainage is required for all approved sub surfaces.
- D. The base shall have the specific minimum slope of two percent (2%) and shall vary no more than one-eighth inch (1/8") when measured in any direction with a ten-foot (10') straight edge. Verify that sub-surfacing drainage, if required, has been installed to provide positive drainage.
- E. Tolerance of concrete or bituminous subsurface shall be within one-eighth (1/8") inch (3.0mm) in ten-feet (10') (3050mm). Tolerance of aggregate subsurface shall be within three-eighths (3/8") inch (10mm) in ten-feet (10') (3050mm).
- F. Verify that aggregate subsurface is fully compacted to ninety-five (95%) percent or greater.
- G. Asphalt base shall be allowed to cure a minimum of fourteen (14) days and new concrete shall be allowed to cure a minimum of seven (7) days prior to installation of safety surface.
- H. All sub-bases shall be approved by the owner, owner's representative, and safety surface manufacturer prior to installation of the safety surface.
- I. Alternate sub-base material shall have prior approval from safety surface manufacturer.

3.02 PREPARATION

- A. Scheduling – No Fault Safety Surface shall be installed after other sub-contractors are complete, the area is free from pedestrian traffic, and under the conditions as outlined in Section 1.06 Project Site Conditions.
- B. Cleaning - The entire subsurface shall be clean, dry, and free from any foreign and loose material.

3.03 INSTALLATION

- A. SBR Cushion Layer
 1. The polyurethane binder and SBR shall be mixed on site using a rotating tumbler to ensure components are thoroughly mixed and are in accordance with manufacture's recommendations.
 2. Binder shall be not less than fourteen (14%) percent, nor more than twenty-two (22%) percent, of the total weight of rubber, and shall provide one hundred (100%) percent coating of the particles.
 3. The SBR and binder mixture will then be poured-in-place by means of screeding, and hand-trowelled to maintain a seamless application.

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4. The installation method shall use a measured screed rod one-sixteenth (1/16") inch thicker than the required depth.
5. Whenever practical, SBR cushion layer shall be installed in one continuous pour on the same day. When a second pour is required, the installer shall fully coat the edge of the previous work with polyurethane binder to ensure 100 percent bond is achieved.
6. Total depth of the safety surface system throughout the playground equipment use zone shall be required to meet the applicable critical fall height requirements of the playground equipment or as specified by owner or architect.
7. Edges - Surface edges shall be flush with edge of adjacent area or tapered to provide safe transition. When connecting to a concrete curb or border the hardened edge shall be primed with adhesive.
8. The SBR cushion layer surface shall be porous and subsurface with positive drainage is required.

B. EPDM Wear Course Layer

1. EPDM rubber granules and polyurethane binder shall be mixed on site in a rotating tumbler to ensure components are thoroughly mixed and are in accordance with manufacture's recommendations.
2. The polyurethane binder shall be not less than 20 percent (20%) of total weight of rubber used in the wear surface and shall provide 100 percent (100%) coating of the particles.
3. The EPDM and binder mixture shall then be poured-in-place by means of screeding, and hand-trowelled to maintain a seamless application.
4. The installation method shall use a measured screed rod one-sixteenth (1/16") inch thicker than the required depth.
5. The thickness of the wear layer will be no less than one-half (1/2") inch.
6. High graphic project will require 1/2" minimum depth for wear layer. Inlaid graphic designs and color transitions shall be installed at the full depth of the color EPDM color wear layer.
7. The EPDM color wear layer shall have a minimum weight of 2.9 pounds per square foot for one-half (1/2") inch depth.
8. The EPDM color wear layer shall be porous.
9. Edges - Surface edges shall be flush with edge of adjacent area or tapered to provide safe transition.
10. Large Areas - All areas more than 2,000 sq. ft. or that require adjacent color pours shall have a cold joint or seam due to the nature of the installation process. Although seldom visible, large areas or adjacent colors shall require the playground surface application to be installed on separate days.
11. Color:
 - a. Standard colors shall include terra cotta red, blue, green, or tan.
 - b. Standard color *blend* shall include any standard color mixed with 50% black.
 - c. Light colors & accent colors shall include light blue, light green, teal, eggshell, cream, tan, gray, purple, yellow, orange & bright red.
 - d. Aliphatic binder shall be recommended for light colors and accent colors to prevent ambering.
 - e. Color selection shall be provided at time of bid and approved by the architect or owner during the submittal process, unless otherwise stated on plans.

3.04 PROTECTION

- A. The PIP playground surface application shall be allowed to fully cure in accordance with manufacturer's instructions. The surface shall be protected by the owner or contractor to prevent all pedestrian traffic from the playground surface area during the curing period of 48 to 72 hours after surface installation is complete, or as instructed by the manufacturer.
- B. Surface installation crew shall be responsible for the protection of No Fault Safety Surface during the installation process. The owner or general contractor shall be responsible for the protection of the surface during the crews off hours and during the curing period upon completion of the installation.

3.05 CLEAN UP

- A. The manufacturer's installers shall not leave adhesive on adjacent surface or play equipment. Spills of excess adhesive shall be promptly cleaned.
- B. The manufacturer's installers shall properly dispose of all material and packing waste before leaving the job site.
- C. The owner or contractor shall be responsible for supplying a dumpster at the job site for all waste associated with installation of the safety surface.

**FOR INDIVIDUAL PROJECT SPECIFICATIONS OR OTHER INFORMATION INCLUDING CRITICAL FALL
HEIGHT REQUIREMENTS for the PLAYGROUND EQUIPMENT
CONTACT: NO FAULT, LLC | 800-232-7766 | WWW.NOFAULT.COM**