

No Fault Safety Surface for Waterplay

Product Specification

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POURED-IN-PLACE RUBBER POURED-IN-PLACE RUBBER (EPDM OR TPV) SURFACING FOR WATER PLAY

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

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 and composed of premium quality TPV or EPDM rubber mixed with a non-flammable, non-shrinking, one part moisture cured polyurethane adhesive as recommended by the Manufacturer and capable of bonding to concrete or asphalt. 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) and the American Standard Testing Methods (ASTM and Consumer Products Safety Commission (CPSC) for surfaces manufactured for the purpose of water play safety surface.

1.03 QUALITY ASSURANCE

A. Test Results

1. Coefficient of Friction - ASTM D2047: All products must meet minimum standard on coefficient of friction of 0.7-wet, 0.9-dry. No exceptions will be made to this requirement in an effort to ensure ample slip-resistant conditions.
2. Surface Frictional Properties & Skid Resistance – ASTM E303: All products shall meet or exceed 90 BPN when tested Dry and 64 BPN when tested wet.
3. Permeability: Product shall meet or exceed a coefficient of permeability of seven (7) feet per minute. NOTE: From a geotechnical standpoint, the permeability of a material is a measure of the velocity at which water will flow through the void spaces or pores under a given hydraulic gradient. The product shall handle a minimum of 8" of rainfall per hour.
4. Flammability of Finished Floor Cover - ASTM D2859: Product shall pass flammability.
5. Accessibility of Surface Systems – ASTM F1951: All playground surfacing products must pass testing to ensure wheelchair access under and around playground equipment as required by the American Disabilities Act.
6. Tear Strength – ASTM D624-00e1 Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic: Tear Resistance must be equal to or greater than 12 pounds per inch.
7. Tensile Strength – ASTM D412-02 Standard Test Methods for Vulcanized Rubber Elastomers and Thermoplastic Elastomers: Tensile Strength must be equal to or greater than 80 Psi.
8. Solar Reflective Index (SRI) – ASTM C-1959 and E-903 –

B. Installer Pre-Qualifications - All materials under this section shall be installed by the Manufacturer or its Certified Installers. The playground surfacing installation shall not be performed by anyone other than the product Manufacturer or its Certified Installers.

C. Contractor Pre-Qualifications

1. A list of twenty five (25) surfacing projects completed with a similar product. List shall include names of project representatives and respective telephone numbers. At least five (5) of these projects must be at least five (5) years old. This list shall also contain projects which require the same level of difficulty, size of project, type of project, e.g. color transitions and special graphics.
2. All bidders must also submit Material Safety Data sheets (MSDS) and Product Data Sheets on all materials.

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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)

1.04 SUBMITTALS

- A. One original hard copy of the submittal package will be supplied with additional copies on individual CD's. Upon request only hard copies shall be supplied.
- 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 state 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. Documentation of Contractor Pre-Qualification as stated in Section 1.03 Quality Assurance.
- G. Documentation of Insurance Requirements as stated in Section 1.03 Quality Assurance.
- H. 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.
- I. Upon request, a sample of safety surface proposed for this project.
- J. 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 40 degrees (F), and/or high humidity may impact cure time, and/or the structural integrity of the final product. Immediate surroundings of the site shall be reasonably free of dust conditions and poor particulate air quality will impact the final surface look.
- C. The Manufacturer's installation manager shall reserve the right to control the project schedule installation based on such factor without penalty to No Fault Sport Group, LLC.
- D. Safety surfacing shall be installed after the water play equipment is installed unless otherwise noted.
- E. Surface installation shall be coordinated by the project manager or designated individual of water play equipment and sub-base installation, with No Fault Sport Group's local production manager and in accordance with No Fault's sub-base requirements.

1.07 WARRANTY:

Surfacing shall maintain required characteristics and be guaranteed against defects in workmanship and material for a period of no less than one (1) year or as specified and agreed upon per contract.

PART 2 – PRODUCTS

No Fault Safety Surface shall consist of synthetic safety surfacing meeting requirements of this specification and shall be manufactured and installed by No Fault Sport Group, LLC (866-637-7678 www.nofault.com) and its certified installation crews.

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

2.01 MATERIALS

A. Polyurethane Primer and Binder

1. Binder for safety surfacing shall be specifically designed for use with rubber granule material for outdoor installations.
2. Binder is a single component polyurethane pre-polymer formulated using a polymeric foam of Diphenylmethane 4, 4' Diisocyanate (MDI), Amber Viscosity – 4500cps, NCO content – 9.0, Density – 20dc-68, PCF Flash Point - >390dF, Elongation – 550%, Tensile – 3900 lb./sq. in.
3. No toluene diphenyl isocyanate (TDI) shall be used.
4. No filler materials shall be used in urethane such as plasticizers and the catalyzing agent shall contain no heavy metals.
5. 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)
6. COLOR TINTED BINDER WILL NOT BE ALLOWED.

B. 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 percent 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 1.00 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.
5. 100% color EPDM required. No black rubber allowed.

C. TPV (Wear Surface)

1. TPV material shall be angular granules with a Shore A Hardness of 65A ±, a Tensile Strength equal to or greater than 3.0 Mpa, and an Elongation at Break greater than 400%.
2. Size of TPV particles shall be not less than 1.00 mm, or greater than 4.0 mm across.
3. STRAND, SHAVED, CHIPPED OR SHREDDED MATERIAL OF ANY TYPE IS NOT ACCEPTABLE.
4. 100% color TPV required. No black rubber allowed.

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 1.03 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 or asphalt installed in accordance with Manufacturer's written specifications.
- C. The base shall have positive drainage and shall vary no more than 1/8" when measured in any direction with a 10' foot straight edge. Verify that sub-surfacing drainage, if required, has been installed to provide positive drainage.
- D. Tolerance of concrete or bituminous subsurface shall be within 1/8 inch (3.0 mm) in 10 feet (3050 mm). Tolerance of aggregate subsurface shall be within 3/8 inch (10mm) in 10 ft (3050 mm). Verify that aggregate subsurface has been fully compacted in 2" lifts to 95 percent or greater.

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- E. 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 commencement of surfacing.
- F. All sub-bases shall be approved by Owner or Owner's Representative prior to installation of the safety surface.
- G. Alternate sub-base material must have prior approval from 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.
- C. Prior to installation of the wear course material, the entire area should be primed by the surface installation crew, according to Manufacturer's recommendations.

3.03 INSTALLATION

- A. Polyurethane binder and rubber (EPDM or TPV) will be mixed on site in a rotating tumbler to ensure components are thoroughly mixed and are in accordance with Manufacturer's recommendations.
- B. The rubber and binder mixture will then be poured-in-place by means of screeding and hand-trowelled to maintain a seamless application.
- C. The binder shall be not less than 22 percent of total weight of rubber used in the wear surface, and shall provide 100 percent coating of the particles.
- D. Installation method shall use a measured screed rod 1/16" thicker than the required depth.
- E. The cap will have a minimum weight of 2.2 pounds per square foot.
- F. Thickness of wear surface shall be a minimum 3/8 inch.
- G. The wear surface shall be porous.
- H. If graphic designs and color transitions are used, they shall be full wear course depth. Color(s) to be determined by architect.
- I. Edges - Surface edges shall be flush with edge of adjacent area or tapered to provide safe transition. Surface shall be sloped to drain as indicated on plans.
- J. Large Areas - All areas in excess of 2,000 sq. ft. or that require adjacent color pours will have a cold joint or seam due to the nature of the installation process. Although seldom visible, large areas or adjacent colors require the No Fault Safety Surface material to be installed on separate days.
- K. Color: Surface shall be a blend of 100% Color, chosen by the architect or Owner during the submittal process, unless otherwise stated on plans. Use of Black in the color blend is not recommended for this application.

3.04 PROTECTION

- A. The synthetic safety surface shall be allowed to fully cure in accordance with Manufacturer's instructions. The surface shall be protected by the Owner from all traffic 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. Owner or General Contractor shall be responsible for the protection of the surface during the crew's off hours and during the curing period upon completion of the installation.

3.05 CLEAN UP

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

**FOR SPECIFIC PROJECT SPECIFICATIONS OR OTHER NO FAULT SAFETY SURFACE APPLICATIONS, PLEASE
CONTACT NO FAULT SPORT GROUP, LLC
Toll Free 866-637-7678 www.nofault.com**