FlexGround FlexTop 1.5 With Xtreme”

Poured In Place Safety Surfacing

Manufacturer’s Specifications

This document provides the specifications for a porous poured in place safety surfacing re-top system composed of a wearing layer upper membrane, grouted and sealed in designated high-wear areas and an underlying impact attenuation cushion layer. The finished surface should be capable of being installed at varying thickness to comply with the Critical Fall Height requirements of the playground equipment.

There are variations in the final specifications as required by the Client.

PART 1 – GENERAL

1.01 Work Included

Provide all labor, materials, and tools necessary for the complete installation of a poured in place safety surfacing system as outlined in these specifications. The system should consist of but not necessarily be limited to the following:

A. Section includes: Resilient playground surfacing poured-in-place system.

B. Related work: Playground equipment and resilient playground surfacing sub-base.

C. Quality Assurance: Manufacturer should have manufactured and installed playground poured-in-place safety surfaces for a minimum of FIVE (5) years and meet current ASTM F-1292 Test Criteria. The installation of the poured in place product should be completed by FLEXGROUND. Manufacturer's detailed installation procedures should be submitted to the Architect and made part of the Bid Specifications.

1.02 Submittals

Prospective manufacturers and/or installers of the poured in place safety surfacing system should be required to comply with the following:

D. The manufacturer must be experienced in the manufacturing of a poured in place safety surfacing system and provide references of FIVE (5) specific installations in the last THREE (3) years.

E. The installer must provide competent workmen skilled in this specific type of poured in place safety surfacing system installation. The designated supervisory personnel on the project must be competent in the installation of this material, including mixing of the materials, and spreading and compacting the materials correctly.

F. Manufacturer should provide written instructions for recommended maintenance practices.

G. Manufacturer should submit color samples for customer verification.

1.03 Definitions

A. EPDM Granules: EPDM rubber (ethylene propylene diene monomer(M-class) rubber), a type of synthetic rubber, is an elastomer characterized by a wide range of applications. The M refers to its classification with the ASTM standard D-1418; the M class includes rubbers having a saturated chain of the polymethylene type.

B. Critical Fall Height: A critical fall height (CFH) is the maximum height of fall from play equipment to the ground. It is important to note that safety surfaces do not prevent injury but aim to lessen the severity of any injury that may occur on falls from height.

C. Fall Height: Fall height is a measurement defined as the vertical distance between a designated play surface and the protective surfacing beneath it.

D. TPV: Thermoplastic Vulcanized Elastomer. Developed using resin and synthetic rubber with higher UV stabilization.

E. SBR: Styrene-butadiene or styrene-butadiene rubber (SBR) describe families of synthetic rubbers derived from styrene and butadiene.

1.04 ASTM Testing Standard – FlexGround meets or exceeds the required ASTM standard below.

A. ASTM F1292 Standard Specification for Impact Attenuation of Surface Systems Under and Around Playground Equipment

B. *ASTM 1292 Standard for Critical Fall Height compliance is only applicable to this specification if existing pad has been tested within 30 days of proposal date and said testing did not register a HIC rating in excess of 1,200.*

1.05 Warranty and Maintenance

The bidder and/or poured in place safety surfacing manufacturer must provide the following:

A. The poured in place safety surfacing manufacturer should provide a warranty to the owner that covers defects in materials and workmanship of the rubber for a period of ONE (1) year from the date of Substantial Completion.

B. The bidder should provide a warranty to the owner that covers defects in the installation workmanship, and further warrant the installation was done in accordance with the manufacturer's recommendations.

C. All poured in place warranties should be limited to repair or replacement of the affected areas and should include all necessary materials, labor, transportation costs, etc. to complete said repairs. All warranties are contingent on the full payment by the owner of all pertinent invoices.

D. The installer should clean the jobsite of excess materials, and if necessary, backfill any excavation around the perimeter with earth or other appropriate fill material.

E. The manufacturer should instruct the owner's personnel on proper maintenance and repair of the FLEXTOP WITH XTREME safety surface.

F. This warranty does not cover damage due to lifting or shifting of the sub-base or substrate beneath the sub base, cracking, moisture issues, alkali, stains, cuts, burns, gouges (such as high heel shoes), shrinking of not more than 3/8", damage caused by use other than intended, excessive wear and tear or any type of vandalism or acts of nature.

G. All warranties, expressed or implied, are contingent upon the following: 1. installation being performed by FLEXGROUND and 2. Full payment by the owner of all pertinent invoices and adherence to any required maintenance procedures.

PART 2 – FLEXTOP WITH XTREME MATERIAL

The FLEXTOP WITH XTREME poured in place safety surfacing system should be in accordance with the following:

A. A dual durometer poured in place system with a wearing layer upper membrane, grouted and sealed in designated high-wear areas and an underlying impact attenuation cushion layer. The finished surface should be capable of being installed at varying thickness to comply with the Critical Fall Height requirements of the playground equipment.

B. FLEXGROUND primer is a 100% solids urethane primer/sealer. It is designed with low viscosity and penetrating abilities making this an ideal priming urethane.

C. The cushion layer, if required, should be a mixture of black recycled SBR rubber buffings mixed with a 100% solids moisture cured MDI Polyurethane binder (100 pounds of SBR rubber buffings to 12 pounds of binder) installed at the appropriate thickness. As an upgrade, a 5/8" chunk rubber derived only from high quality pre-consumer recycled rubber containing EPDM is available. The cushion layer should be porous.

D. The FLEXTOP WITH XTREME SURFACING wearing surface should be manufactured from TPV virgin colored rubber granules mixed with an aromatic or aliphatic urethane binder (110 pounds of TPV to 22 pounds of binder).

E. FLEXGROUT should be a thixotropic thermoplastic paste applied at 1 gallon per 35 square feet over wear course layer in designated high-wear areas.

F. FLEXGROUT thermoplastic composite grout was tested by QAI Laboratories for the following:

   a. ATSM D 2047-11 *Coefficient of Friction: Polish Flooring Surface.* (Test Report #QI1411123-4)

      FlexGrout has been tested and certified at a friction of .588 dry standard, and .817 wet standard.

   b. ATSM D4 12-06ae2 *ThermoPlastic Elastomers – Tension.* (Test Report #QI1305148-2)

FlexGrout has been tested and certified at Peak Tensile Strength of 163psi; chlorine soaked at 133psi; and a Tensile Elongation at Break of 132.2%; chlorine soaked at 112.2%.

c. ATSM D624-00(2012) *Tear Strength*. (Test report #QI1305148-2)
FlexGrout has been tested and certified with a median Maximum Tear Strength of 75.74lbs; chlorine soaked at 70.03lbs.

G. A water-based composite color seal should be applied at a 200 sq. ft. per gallon and spread evenly to cover designated FlexGrout areas.

H. The system color should be selected from Manufacturer's Color Chart by owner prior to bid.

PART 3 – EXISTING RUBBER PREPARATION

The FLEXTOP WITH XTREME site preparation and base should be in accordance with the following:

A. Major damage to existing pad shall be repaired prior to application of FLEXTOP.

B. Excavate existing rubber surface 6-24" along entire edge. Cuts shall be made at a 45 degree angle.

C. If damage to pad is excessive, then removal of existing cap may be required.

D. If cap removal is required, fix existing cushion as needed.

PART 4 – EXECUTION AND INSTALLATION

The poured in place safety surfacing installer should strictly adhere to the installations procedures outlined under these sections. Any variance from these requirements should be accepted in writing by the manufacturer's onsite representative, and submitted to the architect/owner, verifying that the changes do not in any way affect the warranty.

4.01 Primer

A. A urethane primer should be applied to concrete, asphalt or wood surfaces at a rate of 200-250 square feet per gallon. The entire area does not need to be primed at once, instead, prime about 700 square feet at a time. This procedure should be continued until all areas are complete.

B. The urethane primer should be applied to any playground equipment that will be surrounded by the poured in place safety surfacing system.

4.02 Cushion Layer

A. The components of the poured in place safety surfacing should be mixed on site in a mixer to ensure a comprehensive mix according to manufacturer's instructions.

B. The rubber cushion shall be mixed thoroughly with the MDI moisture cure polyurethane binder at the appropriate rate for the total weight of the material so that the binder is evenly dispersed into the rubber base.

C. The cushion layer mix should then be spread and troweled to the desired depth and allow to cure for 24 hours.

4.03 Wear Course Layer

A. The wear course layer should be mixed with 1 to 4 mm TPV or EPDM granules and urethane binder at a rate of 20% of the total weight of the materials so the granules are covered thoroughly and evenly.

B. The wear course layer mix should be spread and troweled over cushion layer to a depth of a half inch (½") and must terminate flush with connecting surface.

C. Where seams are required due to color change, a step configuration will be constructed to maintain wear surface integrity.

D. The finished texture should be slip resistant, smooth and even.

E. The poured in place surface should be allowed to cure for 24-72 hours or until dry to the touch.

4.04 Grout Sealer – IN DESIGNATED HIGH-WEAR AREAS

A. The wear course layer should be sealed with a thermoplastic composite grout. FLEXGROUT should be spread with a trowel at a rate of 1 gallon per 30 square feet. Pressure should be applied to the trowel with enough force to push the grout into the wear course layer, rendering it impermeable. The finished texture should be slip resistant and even.

B. The poured in place surface should be allowed to cure for 24-72 hours or until dry to the touch.

4.05 Color Seal – OVER DESIGNATED AREAS CONTAINING FLEXGROUT

A. The color seal should consist of a water based composite liquid. Color seal should be rolled (or can be sprayed) to completely cover entire surface. The color seal should be allowed to cure for 24-72 hours or until dry to touch.

F. Approved product: Grout and Color Seal by FLEXGROUND
Contact: Bill Stafford, bill@flexground.com

PART 5 – SITE (GENERAL)

A. Trailer/ Large truck access will be necessary for the installation. In the case that access for trailer/truck is not available the owner or general contractor will be responsible for transporting material to the job site.

B. Crew is responsible for protecting the surface only while on site. General Contractor or owner shall be responsible for the security of the surfacing overnight during installation, as well as during the surfacing's curing period upon completion of the install.

C. Crew will leave site clean and shall remove all trash and debris.

D. Owner/General contractor shall provide a dumpster for all waste and trash.