

# FlexGround KoolFlex Ultra

## Poured In Place Safety Surfacing

### Manufacturer's Specifications

This document provides the specifications for a tri-layered non-porous poured in place surfacing system composed of a base layer rubber membrane, an aliphatic thermoplastic composite grout filling layer that renders the pad non-porous, and ¼" top layer of thermoplastic vulcanizate rubber - a thermoplastic elastomer.

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 tri-layered non-porous poured in place safety surfacing system as outlined in these specifications. The system should consist of but not necessarily be limited to the following:

Section includes: Resilient tri-layered non-porous surfacing poured in place system.

- A. Related work: Playground or splash pad equipment and resilient playground surfacing sub base.
- B. Quality Assurance: Manufacturer should have manufactured and installed playground poured in place safety surfaces for a minimum of 5 years. The installation of the poured in place product should be completed by FLEXGROUND, LLC and/or its subsidiaries. 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:

- A. The manufacturer must be experienced in the manufacturing of a non-porous poured in place surfacing system and provide references of five (5) specific installations in the last three (3) years.
- B. The installer must provide competent workmen skilled in this specific type of poured in place 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.
- C. Manufacturer should provide written instructions for recommended maintenance practices.

- D. Manufacturer should submit color samples for customer verification.
- E. Performance Requirements: Provide products that have been manufactured, fabricated and installed to meet or exceed the criteria and methodology identified in PARTS 2, 3 and 4 below.
- F. Quality Assurance:
  - i. Test reports: upon request, testing reports indicating product meets or exceed specified requirements shall be provided.

### 1.03 Warranty & Maintenance

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

- A. The poured in place surfacing manufacturer should provide a warranty to the owner that covers defects in materials and workmanship of the rubber surfacing for a period of **THREE (3) years** from the date of Substantial Completion.
- B. The manufacturer's warranty should include general wear and tear. The warranty should specifically exclude vandalism, high heel punctures, acts of war or acts of nature beyond the control of the owner or the manufacturer.
- C. 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.
- D. 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.
- E. The owner also agrees to do routine maintenance as outlined in the FLEXGROUND Maintenance manual
- F. The installer should clean the jobsite and remove excess materials.
- G. The manufacturer should instruct the owner's personnel on proper maintenance and repair of the KOOLFLEX ULTRA surface.
- H. A **ONE (1) year** warranty extension may be added if an Aliphatic FlexCoat is applied two years after initial installation. FlexCoat will be installed at owners' expense and is not included in the original contract price.

### PART 2 – KOOLFLEX ULTRA MATERIAL

**The KOOLFLEX ULTRA poured in place surfacing system should be in accordance with the following: A tri-layered poured-in-place system with a base layer rubber membrane, an aliphatic thermoplastic composite grout filling layer that renders the pad non porous, and a ¼" top layer of thermoplastic vulcanizate rubber - a thermoplastic elastomer.**

- A. FLEXGROUND Standard Primer is a 100% solids urethane primer/sealer. It is designed with a low viscosity and penetrating abilities making this an ideal priming urethane.
- B. FLEXGROUND WonderPrimer is composed of a mix of 100% solids urethane primer and SeamTight (by FlexGround, LLC).
- C. The KOOLFLEX ULTRA SURFACING base layer should be manufactured from 1-3mm or 1-4mm black EPDM rubber mixed with aromatic urethane binder (110 pounds of rubber to 22 pounds of binder – 20%).
- D. The KOOLFLEX ULTRA SURFACING FlexGrout thermoplastic composite grout layer should be a thixotropic aliphatic thermoplastic paste applied at 1 gallon per 35 square feet over base surface of black SBR rubber layer rendering it non porous.
- E. FlexGrout thermoplastic composite grout was tested by QAI Laboratories for the following (any substitutions must meet these testing standards and be pre-approved 10 days prior to bid date submission):
  - i. *ASTM 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.
  - ii. *ASTM D4 12-06ae2 ThermoPlastic Elastomers – Tension.* (Test Report #QI1305148-2) FlexGrout has been tested and certified at a Peak Tensile Strength of 163psi; chlorine soaked at 133psi; and a Tensile Elongation at Break of 132.2%; chlorine soaked at 112.2%.
  - iii. *ASTM 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.
- F. The KOOLFLEX ULTRA SURFACING TPV layer should be .5-1.5mm or 1-4mm (or a desired mix thereof) thermoplastic vulcanizate rubber mixed with Aliphatic polyurethane binder (110 pounds of rubber to 24.2 pounds of binder – 22%).
- G. The system color should be selected from Manufacturer’s Color Chart by owner prior to bid.

### **PART 3 – SITE PREPARATION AND BASE**

**The KOOLFLEX ULTRA site preparation and base should be in accordance with the following:**

- A. Sub base should be concrete, asphalt or wood. Aggregate bases are not acceptable.
- B. Ensure that selected base has proper drainage prior to installation of KOOLFLEX ULTRA.
- C. Slope of base should comply with local health department regulations.

- D. New concrete or asphalt surfacing should be allowed to cure for 28 days prior to KOOLFLEX ULTRA installation.
- E. Hard Base Construction: Concrete surfaces should be shot blast, acid etch or power scarify as required to obtain optimum bond of the cushion layer to the concrete. Remove sufficient material to provide a sound surface, free of glaze, efflorescence, or form release agents. Remove grease, oil, and other penetrating contaminants.

#### **PART 4 – EXECUTION AND INSTALLATION**

**The poured in place 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 Perimeter Primer**

- A. FlexGround Standard Primer should be applied to concrete 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 play or water equipment that will be surrounded by the poured in place safety surfacing system.

##### **4.02 Base Course Layer**

- A. The base course layer should be mixed with black EPDM granules and aromatic urethane binder at a rate of 20% of the total weight of the materials so the granules are covered thoroughly and evenly.
- B. The base course layer mix should be spread and troweled to a depth of 1/4” immediately after the application of primer.

##### **4.03 WonderPrimer (by FlexGround, LLC)**

- A. Wonder Primer should be applied to the base course layer at a rate of 200-250 square feet per. 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.

##### **4.04 Grout Sealer**

- A. After application of WonderPrimer, the base course layer should be sealed with an aliphatic thermoplastic composite grout. Specified grout product is FlexGrout by FlexGround LLC and should be spread with a trowel at a rate of 1 gallon per 40 square feet. Pressure should be applied to the trowel with enough force to push the grout into the base course layer rendering it impermeable.
- B. The grout sealer should be allowed to cure for 24-48 hours or until dry to the touch.

- C. Substitutions must be pre-approved 10 days prior to bid submission due date.

Approved product: [FlexGrout](#) by FlexGround, LLC

Contact: Bill Stafford, [bill@flexground.com](mailto:bill@flexground.com)

480-694-8320

#### 4.05 FlexGround Standard Primer

- A. FlexGround Standard Primer should be applied to grout sealed layer 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.

#### 4.06 TPV Wear Course Layer

- A. The wear course layer should be mixed with .5-1.5mm or 1-4mm (or a desired mix thereof) thermoplastic vulcanizate rubber mixed with Aliphatic polyurethane binder (110 pounds of rubber to 24.2 pounds of binder – 22%).
- B. The wear course layer mix should be spread and troweled to a depth of one-quarter inch (1/4") immediately after the application of primer.
- C. The finished texture should be slip resistant, smooth and even. The poured in place surface should be allowed to cure for 48-96 hours or until dry to the touch.

### 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.

#### ARIZONA

Lic #288687 & 283192  
602.954.0000

#### CALIFORNIA

Lic #1003439  
916.474.5431

#### NEVADA

Lic #0076764 & 0077757  
702.303.8701