

# Product Specification: AquaFlex® (Non-Porous)



## **SURFACEAMERICA®**

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Note: AquaFlex® is a Landscape Structures Inc. product provided by Surface America.

### **1. GENERAL**

1.1 *Scope:* These are the manufacturer's specifications for the AquaFlex Non-Porous Surfacing System.

1.2 *Description:* AquaFlex Non-Porous troweled at 3/8" over concrete or over a cushioned layer of SBR and/or SBR and foam is a non-porous thermoplastic aliphatic rubber designed to be used on the surface of concrete, asphalt, metal and fiberglass. It will bond to most surfaces and will flex with surface movements. It has been designed to hold up to weather and chlorine.

1.3 *Work:* Provide all necessary materials, labor, tools and equipment to perform the work included in the section for the installation of the resurface.

1.4 The installation of the surface shall be completed by Surface America certified installers. Manufacturer's detailed installation procedures shall be submitted to the architect and made part of the bid specifications.

1.5 Temperature must remain above 50-degrees Fahrenheit throughout the installation and curing process. Weather and surface must be dry, and there should be no rain in the immediate forecast.

1.6 Site must be made secure against vandalism during installation and curing period.

### **2. SUBMITTALS**

2.1 Manufacturer's Product Literature and Specification Data.

2.2 ASTM C 1028-07 Skid Resistance Test.

2.3 Manufacturer's written instructions for recommended maintenance practices.

2.4 Color samples for customer verification.

2.5 Written statement on Manufacturer's letterhead certifying that the top surface will be light stable for a period of three (3) years from date of installation.

2.6 Written manufacturer's warranty for water play applications.

2.7 Product liability insurance certificate with project owner as certificate holder.

2.8 MSDS for items in Section 3 “Products.”

2.9 ASTM F 1292 – If critical fall height is required, attenuation test results shall be submitted by the installer to the requiring agency prior to installation of the surface. The results shall be submitted on the letterhead of the independent testing lab. Impact attenuation results will need to comply with ASTM F 1292 Standard Specification for Impact Attenuation of Surface Systems Under and Around Playground Equipment for the critical fall height of the equipment.

### **3. PRODUCTS**

3.1 *Product:* AquaFlex Non-Porous Surfacing System.

3.2 *Materials:* AquaFlex HC, 100% solids, two-component aliphatic polyurethane Binder/Primer; a combination of 50% AquaFlex aliphatic thermoplastic large pebbles and 50% small pebbles.

3.3 *Impact Layer:* The impact layer is to be made of a composite of foam and SBR rubber or SBR rubber alone. The foam material shall be 100% recycled cross-linked, closed-cell polyethylene foam that is heat-sealed together. The SBR rubber is to be a 50/50 blend of short strand and granular. The binder to be used is AquaFlex single component aromatic polyurethane Binder/Primer.

3.4 *Equal Materials:* The AquaFlex pebbles are thermoplastic aliphatic polyurethane. The system is 100% color. The AquaFlex HC Binder/Primer is a two-part aliphatic, chlorine-resistant polyurethane. Any equal product granule or pebble must be aliphatic polyurethane based; not rubber based such as EPDM, TPV, polyolefin-based TPE; must include a two-part aliphatic polyurethane binder proven to be chlorine resistant and must be 100% color. Recycled black material is not acceptable. Additionally, any equal product must be non-porous, and where applicable, approved by the local board of health.

3.5 *Finish Texture:* Rough grain non-skid finish.

3.6 *Color:* Selected from Manufacturer’s color chart by owner prior to bid.

### **4. SURFACE PREPARATION**

4.1 *New or Existing Concrete:* New concrete must be at least 28 days old. All concrete must be acid etched. Add acid slowly to water in clean polyethylene buckets at a ratio of eight parts water to one part acid. Care should be taken to prevent splashing on workers. Protective clothes such as safety glasses, rubber gloves and boots should be used. The acid solution should be applied on the surface at a rate of 100 square feet per 5 gallons of acid solution. Using a stiff broom, scrub acid solution onto the surface where the solution was poured and continue the process to other areas. Never let the surface dry with acid on it. After 5 minutes, rinse the surface with large amounts of clean water to remove all the acid solution, and then allow the surface to dry. Old concrete that is contaminated with grease or oil can be cleaned with a power-washer. Use a degreasing agent before power-washing. For concrete where a power-washer cannot be used, a diamond grinder can be used to lightly grind the surface to remove contamination.

4.2 *Metal Preparation:* All metal surfaces must be rigid and structurally sound. Contamination such as grease, oil and dirt must be removed prior to coating. Rust or scale should be removed through mechanical means such as sanding or sand-blasting. The surface should be abraded until bright metal is showing. If the surface is to be exposed for an extended period of time, it should be treated with a 10% phosphoric acid solution to prevent new rust formation.

4.3 *Tile Preparation:* Any unstable or loose tile must be removed. Contamination should be removed with a power-washer or mechanically abraded. Any glazing on tile must be abraded off with a grinder or shot blaster.

4.4 *Fiberglass Preparation:* Power-wash any contaminants off the surface. Allow 24 hours for the surface to dry. Glaze coating must be abraded or sanded. Solvent-wipe the fiberglass surface before coating with primer.

4.5 *Asphalt Preparation:* New asphalt must be 15 days old. Broom scrub using a degreaser to remove any surface oils. Power-wash any contaminants off the surface. Allow 24 hours for the surface to dry. **AQUAFLEX CANNOT BE INSTALLED OVER ASPHALT CURED FOR LESS THAN 15 DAYS.**

4.6 *Curb Preparation:* Cut a 3/8" x 1" keyway groove into the existing surrounding curbing. Groove shall be swept clean and be free of all residual residue.

4.7 *Drains, Ground Pop Jets, Doorways/Entryways:* Cut a 3/8" x 1" keyway groove into the concrete surrounding the object. Groove shall be swept clean and be free of all residual residue. If the drains are raised flush with the cushion layer, weep holes must be added where the drain meets the concrete.

## **5. INSTALLATION**

5.1 *Forming:* Following the shape of the area to be surfaced, form out the area with 1" x 4" wood strips or for curved concrete use plywood cut into 4" strips. Stabilize the wood with spikes or stakes and thoroughly wax the wood surfaces with carnauba wax.

5.2 *Impact Cushion Layer:* The impact layer is to be made of a composite of foam and SBR rubber or SBR rubber alone. The foam material shall be 100% recycled cross-linked, closed-cell polyethylene foam that is heat-sealed together. The SBR rubber is to be a 50/50 blend of strand and granular.

5.3 The manufacturer's minimum depth or greater shall be installed as required by the fall height(s) required by the water play equipment that exists or is to be installed and to meet the test results of the finished surface as expressly required within this specification. If no fall height protection is required, the surface will be installed at 3/8" thickness directly over concrete.

### **Foam**

The foam panels should be laid out in accordance with the splash pad design including the appropriate use zone. Cut the foam to fit around the legs of the equipment. Leave a gap of 1" between all the panels during the installation. Over concrete, adhere the foam to the sub-base using AquaFlex® two-part epoxy primer. Over the foam, prime the surface using AquaFlex single component binder/primer cut with 5% xylene. Apply a minimum of 1 1/8" of SBR Buffings over the top of the foam panels creating a consistent and even surface.

### **SBR Buffings**

Over concrete, adhere the SBR to the concrete by applying a coat of AquaFlex single component aromatic polyurethane binder diluted with 5% xylene over the entire surface. Over foam panels, adhere the SBR to the foam by applying a coat of the above AquaFlex binder mixture over the entire surface. For surrounding curbing, prime the vertical surface of the curb using the above binder/primer mixture. Mix two 50-pound bags of SBR buffings (50/50 short strand/ granular mix) with 8 quarts of AquaFlex single component aromatic polyurethane binder so that the buffings are covered evenly. Spread the mix and trowel to the appropriate depth immediately after the application of the primer. Against curbing taper the SBR at a 45-degree angle so that the mixture is tapered all the way to the concrete. Let cure.

5.4 *Sealing:* Premix AquaFlex HC aliphatic two-component Binder/Primer in a plastic pail with a paddle mixer and add 2 times the volume of primer of calcium carbonate to thicken the liquid to a paste consistency. Pour the entire mixture onto surface in a tight line. Using a hand float rubber squeegee

pull the material over the surface making sure to cover the entire surface filling all voids, or use rubber hand squeegee to cover the surface filling all voids. Let cure until tack free.

**5.5 AquaFlex Mixing and Finishing Dry:** Mix a ratio of 50 pounds large pebbles to 50 pounds of small pebbles creating 100 pounds of AquaFlex pebbles in a mortar mixer. Pre-mix 2.14 gallons of AquaFlex HC aliphatic two-component binder in an appropriate plastic container with a paddle mixer. Add the premixed 2.14 gallons of binder to the pebbles in the mortar mixer. Mix thoroughly so that all pebbles are covered evenly. Dump the mix onto the area and spread it with a cam rake or screed box at a thickness of 7/16". Fresno the area keeping the surface as level as possible. Hand or power-trowel the surface using a solution of AquaFlex Trowel Slick to lubricate the surface of the trowel. This will allow easier manipulation of the trowel. Do not use water on the surface as a troweling aid. The compounded mixture will compress to approximately 3/8". Let the surface set for 72 hours.

## **6. CLEANING**

6.1 The contractor should clean the job site of excess materials.

6.2 The contractor shall instruct the owner's personnel on proper maintenance and repair of the AquaFlex surface.

## **7. SPECIAL CONSIDERATIONS**

7.1 Coated Concrete—For a coated concrete surface, diamond grind or power-scarify as required to obtain optimum bond of the AquaFlex material to the concrete. Remove sufficient coated material to provide a sound surface, free of glaze, efflorescence, or from release agents. Remove grease, oil, and other penetrating contaminants. Remove and/or replace any loose or unstable concrete. Concrete will have a pitch of 0.25 inches per foot and should not have low areas that will hold water under the system.

7.2 Existing Caulk-filled Edges—Prepare edges of existing splash pad to meet surrounding concrete. Remove any and all silicone or caulking where the splash pad and the surrounding concrete meet. Cut a groove into the surrounding concrete 1" deep by 1" wide located 1" beyond the current layout where the concrete splash pad meets the surrounding concrete.

7.3 Existing Ground Spray Features—Prepare the spray jets submerged into the existing splash pad by cutting a 3/8" x 1" keyway. Remove all concrete adhered to the existing sides of the spray jets. Solvent-wipe the spray jets to remove any contaminants.

7.4 Existing Drains—Prepare the drains submerged into the existing splash pad by cutting a 3/8" x 1" keyway. Remove all concrete adhered to the existing sides of the drains. Solvent-wipe the drains to remove any contaminants. Drill 1/2" weep holes at a 45-degree angle into the sides of the drains.

### ***Warranty***

*Limited AquaFlex Warranty:* AquaFlex offers a 3-year limited warranty on manufacturing defects. This warranty does not cover areas that are submerged (including zero entries that are below the water line).

### ***Maintenance***

As with any surface exposed to high traffic, regular cleaning helps to maintain a vibrant and attractive surface. AquaFlex is not only highly resistant to ultraviolet rays and chemicals, but it also stands up to 2,800 psi power-washing, and/or high-temperature (up to 180-degrees Fahrenheit maximum) pressure-washing.

The following cleaning agents should not be used on your AquaFlex surface: gasoline, diesel fuel, naphtha, benzene, acids, turpentine, mineral spirits, carbon tetrachloride, WD-40 and all other petroleum distillates.