PebbleFlex® 2.0 Specifications
1. General

1.1 Scope: These are the manufacturer’s specifications for the PebbleFlex® 2.0 surfacing system for playgrounds.

1.2 Description: PebbleFlex 2.0 is a porous thermoplastic aliphatic polyurethane designed to be used as the impact attenuating surface for play areas over concrete, asphalt, and crushed stone aggregate base. It will bond to most surfaces and will resist surface movements. It has been designed to be light-stable and durable.

1.3 Work: Provide all necessary materials, labor, tools, and equipment to perform the work included in section 5 “Installation.”

1.4 The installation of the new surface shall be completed by a Surface America Inc. PebbleFlex 2.0 Certified Installer. 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˚ F throughout the installation and curing processes. Surface must be dry, and there should be no rain in the immediate forecast.

1.6 Site must be secured against vandalism during the installation and 72-hour curing processes.

2. Submittals

2.1 Manufacturer’s Product Literature and Specification Data.

2.2 ASTM 1028 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 5 years from date of installation.

2.6 Test results from a Zenon Arc Weatherometer exposure test from a third party shall be submitted by the installer to the requiring agency prior to installation of the surface. The surfacing system (pebbles and binder) shall be tested for a minimum of 10,000 hours and show no less than 15% tensile strength (PSI) degradation.

2.7 Written manufacturer’s warranty for playgrounds.

2.8 If requested, provide a product liability insurance certificate showing project owner as certificate holder.

2.9 MSDS and Product data sheets for items in Section 3 “Products.”

2.10 ASTM 1292 – If critical fall height is required, impact attenuation test results shall be submitted 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 must comply with ASTM 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: PebbleFlex 2.0 surfacing system for Playgrounds.

3.2 Materials:

3.2.1 Top Layer

PebbleFlex 2.0 aliphatic thermoplastic polyurethane Pebbles and PebbleFlex 2.0 aliphatic polyurethane Binder.

The colors shall be as selected from the drawings, submitted as samples, and mixed on site to the ratios in the samples. Black material, if included, must be an aliphatic thermoplastic polyurethane pebble and not a rubber such as EPDM or TPV.

3.2.2 Impact layer

The impact layer is to be made of rubber. The rubber is to be select SBR rubber strands of not more than ⅛ in length.

3.3 Equal Materials: The PebbleFlex 2.0 Pebbles are an aliphatic thermoplastic polyurethane pebble. The system is 100% color throughout. The PebbleFlex 2.0 binder is 100% solids aliphatic. Any equal product must be urethane based, not rubber based such as EPDM or TPV, must include an aliphatic polyurethane binder and must be 100% color throughout. Any black rubber based material is not considered equal.

3.4 Finish Texture: Pebble grain.

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

4. Surface Preparation

4.1 New or Existing Concrete: If PebbleFlex 2.0 is being applied directly to concrete, then the concrete must be cured for at least 28 days. If an SBR layer is used between the concrete and PebbleFlex 2.0, then the concrete must be cured a minimum of 14 days. New concrete must be light broom finish and can be prepared simply by acid etching. 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, boots, etc. should be used. The acid solution should be used on the concrete at a rate of 100 square feet per 5 gallons of acid solution. Concrete needs to be damp before applying acid. Using a stiff broom, scrub acid solution into the surface where the solution was poured and continue the process to other areas. Never let the concrete dry with acid on it. After 5 minutes, rinse the concrete with large amounts of clean water to remove all the acid solutions, and then allow the concrete 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. Concrete shall have a minimum of ¼”/ft. slope to a drain to ensure proper drainage.
4. **Surface Preparation** (continued)

4.2 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. PebbleFlex 2.0 CANNOT BE INSTALLED OVER ASPHALT CURED FOR LESS THAN 15 DAYS. Asphalt shall have a minimum of 1/8"/ft. slope to a drain to ensure proper drainage.

4.3 Compacted crushed stone: Minimum depth is 4". Compact the base to 95% proctor. Slope the base at 1/8"—1/4"/ft. to accommodate proper drainage. Surface drains and/or weep holes are required at the top surface of the aggregate per the PebbleFlex 2.0 Aggregate Base Instructions.

4.4 Surface preparation: Concrete or asphalt base must have adequate drains to prevent water from backing up into the surface.

5. **Installation**

5.1 Thickness: The total depth of the surface shall be installed in strict accordance and conformity to the Manufacturer's drawings and these specification requirements. Surface thickness will vary in the impact layer. The thickness of the impact layer will be installed according to the fall height(s) of the play equipment. These requirements must be verified in the field prior to starting the installation of the impact layer.

5.2 Impact Cushion Layer: The impact layer is to be made of rubber. The SBR rubber is to be a strand of not more than 1" in length. The manufacturer's minimum depth or greater shall be installed as required by the fall height(s) required by the playground equipment that exists or is to be installed and meet the test results of the finished surface as expressly required within this specification.

For surrounding curbing, prime the vertical surface of the curb using the SBR Binder. Mix one fifty-pound bag of SBR buffings with 8.14 pounds of aromatic polyurethane binder so that the buffings are covered evenly. Spread the mix and trowel to the appropriate depth. Let cure.

5.3 Top Layer: The overall thickness shall be no less than 3/8" and be composed of PebbleFlex 2.0 material with an aliphatic polyurethane binder supplied by the manufacturer.

**PebbleFlex 2.0 Mixing and Finishing**

Dry mix 100 pounds of PebbleFlex 2.0 Pebbles (50 large/50 small) in a mortar mixer. After thorough mixing, add 15 pounds of Binder to the dry Pebbles in the mortar mixer. Mix thoroughly so that each pebble is covered evenly. Dump the mix onto the surface and spread it at a minimum thickness of 3/8", keeping the surface as level as possible. Hand or power trowel using a solution of soapy water to spray the surface of the trowel. This will allow easier manipulation of the trowel. Let the surface set for 72 hours.

High Wear Areas: Under all high wear areas, such as under slides and swings increase the PebbleFlex 2.0 layer to 1/2".

5.4 Large Areas: All areas in excess of 1,800 square feet, or areas that require adjacent color pours due to designs, shall have this work done in strict accordance with the manufacturer's installation requirements with adjacent poured layer surfaces being flush throughout. The installer shall employ proper techniques to ensure that no gaps or separation will occur. All cold joints must be coated with binder prior to the application of the adjacent PebbleFlex 2.0 layer.

6. **Cleaning**

6.1 The contractor should clean the job site and remove any excess materials.

6.2 The contractor shall instruct the owner’s personnel on proper maintenance and repair of the PebbleFlex 2.0 surface.