

Section 9
Resilient Flooring
Appeal^{1M} Solid Vinyl Tile

1. Product Nomenclature

Appeal^{1M} Solid Vinyl Tile

2. Company Information

Flexco Corporation

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Sweet's Catalog: 09650/FLE; Buyline 0254; www.sweets.com

3. Product Description

3.1 Basic Application

Flexco[®] Appeal^{1M} Solid Vinyl Tile is formulated for use in areas with heavy traffic. The product is a resilient, homogeneous, solid vinyl tile. Appeal^{1M}'s colors and elegantly simple pattern permit versatility for creating an array of floor designs. With the use of vinyl feature strips or contrasting color beads, the design possibilities are endless. The pure virgin vinyl composition provides excellent resistance to abrasion, chipping, cracking, and permanent indentations for heavy-duty performance requirements and to help conceal most substrate irregularities, and yet it is flexible for fast and economical installations. This product is ideal in areas that require resistance to staining by fungi and streptovorticillium reticulum (a pink stain organism). The unique chip pattern is appealing and requires no floor finish. Flexco[®] Appeal^{1M} Vinyl Tile may be "heat welded" producing a seamless, Unitized Installation. To complement the variety of styles, coordinating wall base and accessories are available.

3.2 Product Construction

Flexco[®] Appeal^{1M} Vinyl Tile is a solid, homogeneous vinyl tile manufactured using first quality, virgin raw materials. The binder comprises at least 45% of the weight of the product. Special ingredients are added to provide its excellent light stability, chemical resistance, and abrasion resistance. The smooth, hard surface is aesthetically pleasing and does not require the use of floor finish. This resilient, monolithic tile is uniform with respect to color, pattern effect, and composition, throughout the thickness of the tile. Appeal^{1M} Solid Vinyl Tile contains an antimicrobial and will pass the fungi and pink stain test. Flexco[®]'s new high technology cutting system ensures a Precision Squared^{1M} tile for a precision fit.

3.3 Product Types

Gauge: 1/8" (3.175mm)

Sizes: 12" x 12" (304.8mm x 304.8mm); 24" x 24" (609.6mm x 609.6mm); 36" x 36" (914.4mm x 914.4mm); 36 ~" x 36 ~" untrimmed slabs are available

Pre-grooved (Beveled) Edges: Available in 24" x 24" and 36" x 36" for Heat Welded Unitized System

Colors: Currently available in 14 colors. Custom color matching is available.

Vinyl welding rods for heat "welding:" (1) For 24" x 24" tiles, the total square feet of tile divided by 400 equals the number of rolls of vinyl welding rod required; (2) For 36" x 36" tiles, the total square feet of tile divided by 600 equals the number of rolls of vinyl welding rod required; vinyl welding rods are 0.0160" (4 mm) in diameter; roll length is

400 linear feet

4. Technical Data

4.1 Meets ASTM F 1700, *Specification for Solid Vinyl Tile*: Class I, Type A; Federal Specification SS-T-312B, Type III

4.2 ASTM E 648 (NFPA 253), Critical Radiant Flux: Class 1, > 1.00 W/cm²

4.3 ASTM E 662 (NFPA 258), Specific Optical Density of Smoke Generated by Solid Materials: Passes, < 450

4.4 UL 992, Surface Flame Propagation: Passes, < 2.0

4.5 ASTM F 925, Resistance to Chemicals: Passes, List of chemicals available

4.6 ASTM D 570, Water Absorption of Plastics: < 0.15%

4.7 ASTM D 2047, Static Coefficient of Friction (Slip Resistance): Passes, > 0.50, <0.70; dry, flat surface

4.8 ASTM F 970, Static Load Limit: 250 psi; Modified ASTM F 970, 2000 psi

4.9 ASTM F 1515, Light Stability: Passes, Delta E < 8.0

4.10 ASTM E 595, Outgassing: Excellent, Test results available

4.11 EN 425, Castor Chair Test: Passes

4.12 ASTM D 3389, Abrasion Resistance: Passes

4.13 ASTM G 21, Determining Resistance of Synthetic Polymeric Materials to Fungi: 0, No growth

4.14 ASTM E 1428, Performance of Antimicrobials in or on Polymeric Solids Against Staining by *Streptococcus Reticulum* (A Pink Stain Organism): 0, No stain; 2mm zone

4.15 AATCC Test Method 147: Antibacterial Activity Assessment of Textile Materials-Parallel Streak; 4mm zone; Inhibition of Growth under the sample.

5. Product Limitations/Precautions

Flexco® Appeal^{hM} Solid Vinyl Tile must be installed using either the Flexco® 16/86 Multi-Performance Tile and Tread Adhesive or the Flexco® 77 Solvent Free Epoxy Flooring Adhesive. The Flexco® 77 Solvent Free Epoxy Flooring Adhesive must be used for installations in areas where the flooring will be subjected to lateral shear stresses and/or rolling loads, in areas subjected to moisture or other liquids, in areas where the substrate or flooring is not maintained within the specified temperature range, and on metal and some other non-porous substrates. The product must be installed in accordance with Flexco®'s recommendations in order for the product warranty to be in effect. Flexco® Appeal^{hM} Solid Vinyl Tile may have manufacturing sheen or shade variances until initial maintenance is performed. Flexco® Appeal^{hM} Solid Vinyl Tile may be stained if it is allowed to remain in contact with products that may contain staining ingredients such as tires, casters, and walk-off mats. Fading can occur from extensive exposure to heavy direct or glass-filtered sunlight, or unfiltered ultra-violet rays. Ensure any disinfectant, cleaning agent, dye, floor care product, pesticide, or other chemical (solid, liquid, or gas) that may come in contact with the flooring will not produce permanent discoloration and/or damage to the flooring. If any chemical that may come in contact with the flooring is not on the stain resistance chart, the flooring must be tested prior to installation. Contact Flexco® Customer Service for a stain resistance chart and for assistance in conducting stain testing. Flexco® Appeal^{hM} Solid Vinyl Tile is not to be used in commercial kitchens or in areas exposed to animal fats, greases, oils, solvents, strong detergents, or where there is excessive moisture. Flexco® Appeal^{hM} Solid Vinyl Tile must not be used in areas that may be subjected to sharp spikes, cleats, sharp wheels, or other objects that could damage the flooring. DO NOT drag or move objects across the flooring or drop objects onto the flooring that may

cause damage to the flooring. Use appropriate floor protection devices. The flooring is not to come in contact with direct heat, such as radiators, hot ovens, or other heated equipment. Ensure the proper product is used for the service application with regard to type and amount of traffic. Flexco® Appeal^{hM} Solid Vinyl Tile is for indoor use only with temperatures maintained from 55⁰ F to 95⁰ F. Color selections must be made from actual samples as exact matching of color, shade, and/or degree of mottling may vary. Follow all local, state, and federal safety standards and practices.

6. Installation

6.1 General Preparation and Conditioning

Read the literature concerning the product description, product limitations, product installation, adhesive information, product maintenance, and warranty before installing the tile. All materials are to be delivered to the installation location in its original packaging with labels intact. DO NOT stack pallets. Store products in a dry area protected from the weather on a smooth, flat, dry surface with temperatures maintained between 65⁰ F and 85⁰ F. Remove all plastic wrapping and strapping from the pallets in the installation area at least 48 hours prior to installation. For proper acclimatization, remove the tile from the cartons and stack evenly on a smooth dry surface with each stack no more than 18" high. When stacking tiles prior to and during installation, place the tiles face-to-face and sanded back-to-sanded back to prevent the sanded back of the tiles from becoming contaminated. Protect the product from damage. The installation area, tile, adhesive, and vinyl welding rods, if required, are to be maintained between 65⁰ F and 85⁰ F for at least 48 hours before installation, during installation, and 48 hours after the installation. Maintain room temperatures between 55⁰ F and 95⁰ F thereafter. **Notice:** Tile should be loose laid in the room or area prior to spreading of adhesive to determine the proper layout to ensure the best overall appearance and to minimize small border cuts. Inspect all material for proper type and color. Conduct the proper moisture emission and pH testing on the substrate. Proceed with the installation only when the conditions are proper and correct. A bond test using either the Flexco® 16/86 Multi-Performance Tile and Tread Adhesive or the Flexco® 77 Solvent Free Epoxy Flooring Adhesive throughout the area approximately 50 feet apart should be performed at least one week prior to the scheduled installation to ensure the surface is suitable. After 72 hours, there should be an unusual amount of force to lift tile from the substrate with adhesive bonding to the tile and the substrate. Close the area to traffic during flooring installation. Install tiles and accessories after other finishing operations, including painting, have been completed. If the back of the tile becomes soiled prior to installation, clean with a soft cloth dampened with a mild soap and water solution, rinse, let dry. Tile may be installed over radiant heated floors, provided the surface temperature is maintained between 65⁰ F and 85⁰ F. **Notice:** You will find an arrow on the back, sanded side, of each tile. It is important that each tile be installed with the arrow in the same direction. If the tiles are not laid in the same direction, the reflection of light will cause an optical illusion, making the surface appear to be different shades. If the tiles are installed at random, disregarding the arrows on the back, it will require extensive buffing with 3M 5300 Blue Cleaner pads and occasionally 3M 7200 Brown Stripper Pads with a 175-600 RPM buffer. **Warning:** Follow all local, state, and federal standards and practices for the proper removal and disposal of flooring, adhesives, or other materials. Follow all local, state, federal, and manufacturer's safety standards for the use of all products and equipment.

6.2 Subfloor/Substrate Inspection and Preparation

6.2.1 All subfloors/substrates must be inspected prior to installation. All subfloors/substrates must be clean, smooth, permanently dry, level, and structurally sound. The substrate must be free of moisture, dust, sealers, paint, curing compounds, parting agents, residual adhesives, adhesive removers, hardeners, resinous compounds, solvents, wax, oil, grease, asphalt, gypsum compounds, alkaline salts, excessive carbonation or laitance, mold, mildew, or any other extraneous coatings, films, or materials that could prevent a successful bond. DO NOT use sweeping compounds, solvents, citrus adhesive removers, or acid etching to clean the substrate. DO NOT install flooring over gypsum-based or plaster based leveling or patching compounds. DO NOT install new floor covering over old floor covering, as the old floor covering may not be adequately bonded, hide possible structural defects, or cause plasticizer migration into the new flooring. Follow all applicable industry, local, state, and federal standards for the removal of existing floor covering and adhesive. Care must be taken to analyze the conditions and correct any problems prior to installation. Follow the manufacturer's recommendations for any patching or underlayment materials.

6.2.2 Concrete substrates must be tested in accordance with ASTM F 1869 to quantitatively determine the amount of moisture vapor emission at least one week prior to the installation. Conduct a minimum of one test for every 1000 square feet of flooring. The anhydrous calcium chloride test kits are available from Flexco®. The mois-

ture vapor emission shall not exceed 5 pounds per 1000 square feet per 24 hours. If the substrate does not meet the moisture vapor emission requirement, the flooring shall not be installed until the problem has been corrected. DO NOT install the flooring if there is hydrostatic pressure. Every concrete floor slab on-grade or below grade to receive resilient flooring shall have a permanent, effective moisture vapor retarder installed below the slab. A pH test must be performed to test for excessive alkalinity using a pH pencil or litmus paper and deionized water. The pH Pencil is available from Flexco[®]. A scaly, sandy, or powdery surface is an indication of some form of contaminant, usually excessive alkalis or an alkali-silica residue. A pH reading higher than 10 is an indication of a potential problem and the concrete must be neutralized using a 10% muriatic acid and water solution (10 parts water to 1 part muriatic acid). Apply the solution on the substrate with a mop, allow the solution to thoroughly dry, and rinse the substrate with a mop using clean water, let thoroughly dry, and retest. Continue to neutralize until the pH level is acceptable. Follow the recommended safety practices when using muriatic acid. Moisture and alkali salts in the concrete can cause the following problems after installation: adhesive deterioration, bumps, ridges, bubbles, discoloration, mold, mildew, bacteria growth, efflorescence, tile shifting, tile peaking, or curling. Ensure concrete is of adequate strength, which generally should be 140 pounds per cubic foot or more. Joints such as expansion joints, contraction joints, isolation joints, or other moving joints shall not be filled with patching compound or covered with resilient flooring. Expansion joint covers designed for use with resilient flooring should be used. Any surface cracks, grooves, depressions, saw cuts, control joints or other non-moving joints, and other irregularities shall be filled and smoothed with a high quality grade Portland cement-based, water resistant, non-shrinking, non-staining, mildew resistant, alkali resistant underlayment having a minimum compressive strength of 3500 psi after 28 days. Some underlayments may fail under excessive weight; an epoxy caulking compound may be required for certain repairs. Mechanically cleaning the substrate by shot-blasting, scarifying, or sanding shall be performed to achieve a flat, smooth, clean surface to prevent irregularities, roughness, or other defects from telegraphing through the new resilient flooring. The surface of the concrete shall be flat to within the equivalent of 3/16" in 10 feet, as described in ACI 117R. The surface shall be cleaned of all loose material by scraping, brushing, vacuuming, or other methods, or a combination thereof, immediately before commencing installation of resilient flooring. Follow the proper safety practices during the preparation and installation. Follow the recommendations of the American Concrete Institute (ACI 302.1R, *Guide for Concrete Floor and Slab Construction*; ACI 360.R, *Design of Slabs on Grade*; ACI 223, *Standard Practice for the Use of Shrinkage-Compensating Concrete*); The American Society for Testing and Materials (ASTM F 710, *Standard Practice for Preparing Concrete Floors and Other Monolithic Floors to Receive Resilient Flooring*), and the American National Standards Institute (ANSI A 157.1, *Recommended Practice for Concrete Floor and Slab Construction*) for the preparation of concrete to receive resilient flooring. Refer to 6.2.1.

6.2.3 Wood subfloors should be of double layer construction with a minimum thickness of 1". Crawl spaces underneath wood subfloors shall be in compliance with local building code ventilation practices and have clearance of at least 18" of cross-ventilated space between the ground level and joists. Wood joists should be spaced on not more than 16" centers. Place a moisture retarder, having a maximum rating of 1.0 perm, on the top of the ground under the wood subfloor overlapped at least 8". APA, The Engineered Wood Association, Underlayment Grade plywood, minimum 3/8" thick, with a fully sanded face is to be used. Use APA approved exterior grade plywood if finished floors are subjected to moisture. OSB, lauan, maranti, solid-core mahogany, waferboard, particleboard, chipboard, flakeboard, tempered hardboard, glass mesh mortar units or cementitious tile backer boards, sheathing-grade plywood, preservative-treated plywood, or fire-retardant treated plywood are not recommended as some manufacturers may use resins or other adhesives in the manufacturing of the product that may cause discoloration or staining of the flooring. The warranties, performance, installation, and use are the responsibility of the manufacturer and/or contractor. DO NOT use plastic or resin filler to patch cracks. DO NOT use cement or rosin coated nails or staples or solvent-based construction adhesive to adhere the plywood. Installation on a sleeper, a wood subfloor system constructed over the top of concrete, is not recommended. Installation directly over Sturd-I-Floor panels is not recommended. All wood subfloors/substrates, single construction plywood floors, single and/or double tongue-and-groove strip floors, and wood plank floors must be prepared to receive resilient flooring in accordance with federal and industry standards. Follow the recommendations of the APA, The Engineered Wood Association, *Design/Construction Guide, Residential and Commercial*, and ASTM F 1482, *Standard Guide to Wood Underlayment Products Available for Use Under Resilient Flooring*, for the installation and proper construction of the panels to receive resilient flooring. It is the contractor's responsibility to determine if the subfloor is acceptable to receive the flooring. Refer to 6.2.1.

6.2.4 Terazzo and ceramic floors to be used as subfloors/substrates are to follow the procedures recommended for concrete in 6.2.2. Ensure all glazed, smooth, and/or shiny surfaces are properly sanded. Fill all grout lines and other irregularities with a Portland cement-based underlayment with a minimum compressive strength of 3500 psi. The subfloor must be structurally sound. Inspect and ensure there is an adequate bond of the old flooring to the original substrate. Flexco® will not warranty the product if there is a bond failure caused by problems relating to the old flooring. Refer to 6.2.1.

6.2.5 Metal floors to be used as a subfloor/substrate must be thoroughly cleaned of any residue or rust and properly sanded to provide a smooth, level, clean substrate to receive the resilient flooring. The metal subfloor shall be structurally sound. Deflection of the metal floor can cause a bond failure between the adhesive and the metal substrate. On an extremely smooth, non-porous, metal substrate, a longer “tack up” may be required in order to prevent the adhesive from oozing between the seams. Refer to 6.2.1.

6.3 Adhesive Information

6.3.1 Flexco® 16/86 Multi-Performance Tile and Tread Adhesive

Flexco® 16/86 Multi-Performance Tile and Tread Adhesive is a solvent free, high strength, acrylic adhesive for indoor installations over porous and some non-porous substrates on grade, below grade, or above grade. This adhesive contains antimicrobial protection that protects the dried/applied adhesive from mold, mildew, and bacteria that cause odors and product degradation. Use of this adhesive is limited to casual foot traffic, in areas where there are no lateral shear stresses or rolling loads, in areas where the temperature is maintained between 55⁰ F and 95⁰ F, and in areas that will not be subjected to moisture or other liquids. Flexco® 77 Solvent Free Epoxy Flooring Adhesive may be required on metal and some other non-porous substrates and for more severe service conditions. Spread coverage using a 1/16” x 1/16” x 1/16” flat “V” notch trowel is approximately 150 square feet on a smooth substrate. Coverage will vary according to the type of surface, surface texture, spreading angle, and adhesive temperature. Adhesive is available in 1-gallon and 4-gallon pails. Shelf life is one year stored at 70⁰ F in an unopened container. Remove wet adhesive with a soft, clean cloth dampened with water or denatured alcohol. Dried adhesive can be removed using a soft, clean cloth dampened with mineral spirits. The adhesive is freeze/thaw stable to 5 cycles at 0⁰ F; however, it is recommended to protect all adhesive products from freezing. If frozen, DO NOT stir until material has completely thawed. Label information is in English and Spanish. Read all MSDS information and follow the proper safety procedures. VOC grams per liter of coating: 0 grams.

6.3.2 Flexco® 77 Solvent Free Epoxy Flooring Adhesive

Flexco® 77 Solvent Free Epoxy Flooring Adhesive is a solvent free, non-flammable, high performance epoxy adhesive used for indoor installations over porous and non-porous substrates on grade, below grade, or above grade. The Flexco® 77 Solvent Free Epoxy Flooring Adhesive must be used for installations in areas where the flooring will be subjected to lateral shear stresses and/or rolling loads, in areas subjected to moisture or other liquids, in areas where the substrate or flooring is not maintained within the specified temperature range, and on metal and some other non-porous substrates. When used on non-porous substrates, the adhesive must be allowed to “tack up”, but not allowed to cure. Spread coverage using the 1/16” x 1/16” x 1/16” flat “V” notch trowel is approximately 150 square feet and spread coverage using the 1/32” deep x 1/16” wide x 1/32” flats square notch trowel is approximately 175 square feet on a smooth substrate. Coverage will vary according to the type of surface, surface texture, spreading angle, and adhesive temperature. Adhesive is available in 1-quart and 1-gallon pails. Shelf life is one year @ 70⁰ F in an unopened container. Although the epoxy components are non-freezing, the adhesive must be allowed to stabilize to ambient temperature before mixing. Any adhesive on the surface of the tiles or surrounding area must be removed immediately with a clean cloth dampened with warm soapy water or denatured alcohol. DO NOT allow the adhesive to cure on the surface of the tile. A bond failure will occur if the epoxy is not properly mixed. Label information is in English and Spanish. Read all of the product and safety information concerning the adhesive and any other chemicals or cleaning agents prior to installation. VOC grams per liter of coating: 0 grams.

6.4 Adhesive Application and Product Installation

6.4.1 Appeal~ Vinyl Tile Installation using Flexco® 16/86 Multi-Performance Tile and Tread Adhesive

Read all installation literature before proceeding. Follow safety precautions on the adhesive label and Material Safety Data Sheet. Must have adequate ventilation. Prior to adhesive application, dry lay the flooring to ensure

desired aesthetics. When stacking tiles prior to and during installation, place the tiles face-to-face and sanded back-to-sanded back to prevent the sanded back of the tiles from becoming contaminated and to protect the face from damage. Pour the contents of the container onto the substrate and spread evenly using a 1/16" x 1/16" x 1/16" flat "V" notch trowel while being careful to leave no puddles of adhesive. Spreading large areas of adhesive in excess of 150 square feet could possibly allow the adhesive to cure or setup before the tile is installed which would result in a bond failure. For **porous** substrates, allow the adhesive to "flash off" for approximately 10 minutes before installing the tile. On **non-porous** substrates, allow the adhesive to become dry to the touch so that there is very little or no transfer of adhesive to the finger. **Caution:** Open time and curing characteristics will vary upon the type of substrate, substrate temperature, ambient temperature, humidity, and proper conditioning of the adhesive. Allowing the adhesive to remain open too long will result in a bond failure. **Notice:** You will find an arrow on the back, sanded side, of each tile. It is important that each tile be installed with the arrow in the same direction. If the tiles are not laid in the same direction, the reflection of light will cause an optical illusion, making the surface appear to be different shades. If the tiles are installed at random, disregarding the arrows on the back, it will require extensive buffing. When laying the flooring, use a kneeling board, or for best results, work off the flooring whenever possible to avoid shifting of the tile and to also not track adhesive onto the surface of the tile. If the adhesive is bleeding or oozing at the seams, either too much adhesive is being applied, or the adhesive is too "wet". Immediately remove excessive wet adhesive with a soft, clean cloth dampened with warm soapy water. Periodically, lift the flooring to check for proper adhesive transfer. There should be at least a 90% coverage of adhesive on the back of the flooring. Observe the adhesive to ensure that the adhesive has not surpassed the open time and has not begun to cure. Borders and other specialty cut tiles must be scribed and cut to fit snugly, not tightly, against the wall, threshold, transition strip, fixtures, or other obstacles. Forcing incorrectly sized tiles into smaller areas will cause buckling of the tile. DO NOT wait until all the main aisle flooring has been installed to begin laying the borders. Lay the border tiles within the adhesive open time. Roll and cross roll each section of tile laid with a 100-pound 3-section roller within 15 minutes after the tile section has been installed. The rolling time may need to be adjusted to climatic conditions. Use a hand roller in areas that cannot be reached with the larger roller. Conduct a visual inspection during the rolling process to ensure there has been no shifting of the tiles and that there is no adhesive on the surface of the tile. DO NOT wait until the entire installation is completed before rolling as the adhesive may have surpassed the open time and be cured. Roll and cross roll a second time approximately 30 minutes after the initial rolling. There is to be no foot traffic on the floor for at least 48 hours and no wheeled conveyances for at least 3 days. Protect flooring against marks, marks, indentations and other damage.

6.4.2 Appeal~ Vinyl Tile Installation using Flexco® 77 Solvent Free Epoxy Flooring Adhesive

Read all installation literature before proceeding. Follow safety precautions on the adhesive label and Material Safety Data Sheet. Must have adequate ventilation. Prior to adhesive application, dry lay the flooring to ensure desired aesthetics. When stacking tiles prior to and during installation, place the tiles face-to-face and sanded back-to-sanded back to prevent the sanded back of the tiles from becoming contaminated and to protect the face from damage. DO NOT mix partial units of this adhesive, because the ratio of Part A to Part B is not 1:1. Flexco® 77 Solvent Free Epoxy Flooring Adhesive is packaged in two separate containers marked Part A (epoxy resin) and Part B (polyamide resin, hardener). Remove the lids and add all of Part A into Part B. Mix the combined parts with the furnished paddle using a rotary motion while at the same time lifting from the bottom. A slow speed, 200 RPM maximum, drill with an attached mixing paddle may also be used. **Mix 4 minutes.** After mixing, there is to be no streaking. **Caution:** Higher mixing speeds and/or longer mixing time will reduce the open time and can cause premature curing of the adhesive; however, if not mixed long enough, the adhesive will not properly cure. DO NOT allow the mixed epoxy adhesive to stand in the container. **Immediately** after mixing, pour the contents onto the substrate. **Immediately** spread the adhesive evenly with a 1/16" x 1/16" x 1/16" flat "V" notched trowel while being careful to leave no puddles of adhesive. If the substrate has been shot blasted or a rough textured underlayment has been applied, additional adhesive may have to be purchased to ensure proper adhesive coverage. **Note:** A 1/32" deep x 1/16" open x 1/32" flats square notch trowel may be required on some semi-porous or non-porous substrates. Spreading large areas of adhesive in excess of 150 square feet could possibly allow the adhesive to cure or setup before the tile is installed which would result in a bond failure. On **porous** substrates, allow the adhesive to "flash off" for approximately 15 minutes. On **non-porous** substrates, allow the adhesive to "tack up" for approximately 30 minutes. **Caution:** "Tack up" time, open time, and curing characteristics will vary upon the type of substrate, temperature of the substrate, ambient temperature, humidity, proper mixing of the adhesive, and proper conditioning of the adhesive. Observe the adhesive to ensure the adhesive has not surpassed its open time and started to cure. **Notice:** You will find an arrow on the back, sanded side, of each tile. It is important that each tile be

installed with the arrow in the same direction. If the tiles are not laid in the same direction, the reflection of light will cause an optical illusion, making the surface appear to be different shades. If the tiles are installed at random, disregarding the arrows on the back, it will require extensive buffing. When laying the flooring, use a kneeling board, or for best results work off the flooring whenever possible to avoid shifting of the tile and to also not track the epoxy adhesive onto the tile. If the adhesive is bleeding or oozing at the seams, either too much adhesive is being applied or the adhesive is too "wet". Immediately remove excessive wet adhesive with a soft, clean cloth dampened with warm soapy water or denatured alcohol before the epoxy cures. After cleaning with denatured alcohol, rinse with a clean cloth dampened with clean water. DO NOT allow the epoxy to cure on the surface of the tile, it will be extremely difficult to remove. Periodically, lift the flooring to check for proper adhesive transfer. There should be at least a 90% coverage of adhesive on the back of the flooring. Borders and other specialty cut tiles must be scribed and cut to fit snugly, not tightly, against the wall, threshold, transition strip, fixtures, or other obstacles. DO NOT wait until all the main aisle flooring has been installed to begin laying the borders. Lay the border tiles within the adhesive open time. Roll and cross roll each section of tile laid with a 100-pound 3-section roller within 30 minutes after the tile section has been installed. Use a hand roller in areas that cannot be reached with the larger roller. Conduct a visual inspection during the rolling process to ensure there has been no shifting of the tiles and that there is no adhesive on the surface of the tile. DO NOT wait until the entire installation is completed before rolling as the adhesive may have surpassed its open time. Inspect each section laid after rolling to check for raised edges. Roll and cross roll a second time approximately 30 minutes after the initial rolling. If necessary, roll and cross roll again. There is to be no foot traffic on the floor for at least 48 hours and no wheeled conveyances for at least 3 days. Protect flooring against mars, marks, indentations and other damage.

6.5 Flash Cove Procedure

Install field tile prior to flash cove. Allow a minimum of 6" flash up the wall and extending at least 6" on the floor. Install the Flexco® #197 Square Resilient Cove Cap at the desired height. Install the Flexco® #195 Cove Stick Filler at the junction of wall and floor to provide the proper radius. Measure and cut in the flash cove. Using a heat gun, heat the tile uniformly over the entire length and bend to desired radius, making sure you have good contact with the cove stick filler. Use a piece of scrap to test bending procedure and DO NOT overheat tile. To make both inside corners and outside butterfly corners, use building felt to create a dry pattern. Cut the tile to the pattern. Heat it, trim it, and fit into place. For outside corners, after cutting and grooving your butterfly piece, heat it, and fit into place. Hand groove the butterfly piece and the rest of the corner at the point where they meet, prior to welding the two pieces together. As an alternative, preformed metal corners may be used. All flash cove sections should be preformed and allowed to cool prior to spreading adhesive. Final heating and forming should be made after adhesive has been applied. Use Flexco® 16/86 Multi-Performance Tile and Tread Adhesive on the wall for installation of flashed-cove pieces of tile. Use either the Flexco® 16/86 Multi-Performance Tile and Tread Adhesive or the Flexco® 77 Solvent Free Epoxy Flooring Adhesive on the floor and allow the adhesive to overflow on the cove strip. Heat weld the flash cove tile to the field tiles and up the wall, if required. Trim the heat welded flash cove seams using an X-ACTO knife to the desired appearance. After trimming, carefully glazing the surface of the heat welded seam with the hot air from the gun may smooth out any imperfections.

6.6 Unitized Heat Weld Procedure

DO NOT heat weld until the epoxy adhesive has cured, approximately twenty-four (24) hours after the installation of the tile. The welding bead will not bond to the adhesive. Flexco®'s pre-grooved tiles eliminate the need for routing on the job. It may be necessary to hand rout some areas depending upon the job condition. If the installation is to be routed on the job, using an electric grooving machine, set the blade to cut the groove approximately 66% of the total thickness of the flooring (.082", if the flooring is 1/8" thick). During the grooving process, ensure approximately 50% of material is removed from each side of the adjoining pieces of the flooring that is being grooved. Practice on a piece of scrap flooring to obtain the proper depth. Temperature of the flooring and welding bead prior to and during installation is to be between 65° F and 85° F. It may be necessary to hand groove some of the seams using a hand grooving tool with a narrow blade near the walls or other obstacles. While grooving, pre-heat the welding gun as recommended by the manufacturer. After the grooving is complete, use a hot air welding gun, insert the Flexco® Vinyl Welding Rod, 0.160" in diameter, through the opening of the 4mm welding tip into the center of the routed groove in the flooring. Practice the welding technique by using a piece of scrap flooring to determine the temperature setting of the heat gun and welding speed to achieve a successful bond. Ensure the groove and welding bead are clean and free of any contaminant that may prevent a successful bond when heat welded together. Follow the recommended welding procedures provided by the welding gun manufacturer. Begin welding at the

wall and move toward the center. You can see the flooring and bead flowing together while welding if the settings are correct. Welding too slowly may char or burn the flooring. An excessive welding speed will not allow the bead and flooring to reach the proper temperature for a successful bond. Ensure sufficient downward pressure is applied to fill the groove. Work with seams in one direction at a time, cut a “V” groove in installed bead at seam intersection, and then complete the procedure in opposite direction. Allow the bead to completely cool and trim the excess bead with a clean, sharp quarter moon spatula knife with an attached clean, sharp trim plate. After one hour, perform a second trim using only the quarter moon spatula knife to create a smooth, level surface. If the heat welded seam is trimmed before it is completely cold, and/or, if the seam is first cut with only the quarter moon spatula knife without trim the trim plate, the a concave skive can result. If the welded seam is not allowed to properly cool before trimming, the welded seam can shrink and allow particulate and liquids into the seam. After trimming, carefully glazing the surface of the heat welded seam with the hot air from the gun may smooth out any imperfections.

Product Maintenance

7.1 Initial Maintenance

7.1.1 Wet Cleaning

DO NOT scrub or mop the floor for at least 72 hours after installation to allow the adhesive to properly cure. Remove any covering that may have been used to protect the floor. The flooring must be properly cleaned before it is released for normal use. Sweep and vacuum to remove dirt and other particulate, then damp mop or scrub the flooring with a mild, neutral pH cleaner such as TASKI profi, Johnson’s Stride, or Butchers’ Hot Springs. For light scrubbing, use low speed rotary buffer, 175 – 600 RPM, with a 3M 5100 Red Buffer Pad. Follow the manufacturer’s recommendations for dilution and proper use. DO NOT use highly alkaline, highly acidic, or solvent-based cleaners. DO NOT use sweeping or cleaning agents containing oils or solvents. Rinse the flooring immediately after mopping with clean warm water and allow it to dry thoroughly. To remove excessive dirt, scuffs, or light scratches, wet buff using a low speed rotary buffer, 175 – 600 RPM, with a 3M 5300 Blue Cleaner Pad.

7.1.2 Dry Buffing

DO NOT dry buff until floor has been wet cleaned. Sweep, dust mop, or vacuum the floor to remove dirt and other particulate before dry buffing. Dry buff with a low speed rotary buffer, 175 – 600 RPM, using a 3M 5300 Blue Cleaner Pad followed with a 3M 5100 Red Buffer Pad to remove any directional sheen or light shading. To finish use a 3M 4100 White Super Polish Pad to achieve the desired glossy appearance. DO NOT heel the buffing machine.

7.2 Regular Maintenance

7.2.1 General Information

Insufficient cleaning will reduce the wear life of the flooring. The amount of maintenance required is directly related to the amount and type of traffic and type of particulate deposited on the floor. There are several alternative maintenance systems available: TASKI Professional Building Care (800- 862-3600), Johnson Professional Wax (800-558-2332), or The Butcher Company (888-291-7510). The floor care product manufacturers will assist you in determining the best maintenance program. Sweep or vacuum daily to remove dirt or other particulate. Spot clean using a clean, soft cloth dampened with a solution of a neutral (pH 7 to 8) cleaner and water. Hand buff with a clean, soft cloth or towel to bring back the shine. DO NOT use highly alkaline, highly acidic, or solvent-based cleaners. **Caution:** Some germicides, disinfectants, cleaning agents, floor maintenance products, and pesticides may stain or damage the surface of vinyl tile; therefore, test the products to ensure they will not stain or damage the tile. Spills of any type must be removed immediately to help prevent staining or permanent damage. Contact Flexco® Customer Service to obtain information concerning stain resistance to various chemicals and products. DO NOT use sweeping or cleaning agents containing oil or solvents. DO NOT use treated mops and thoroughly clean new mops before use. DO NOT use kerosene, gasoline, naphtha, or other solvents on vinyl flooring. DO NOT use varnish, shellac, paste wax, paint, or other substances that could discolor or damage the flooring. **Caution:** The use of floor finishes or waxes are not recommended. **Caution:** When wet, flooring will become slippery; therefore, use the appropriate warning signs on the floor.

7.2.2 Wet Cleaning

Sweep, dust mop, or vacuum the flooring to remove dirt and other particulate. Damp mop or scrub with a commercial low speed scrubber, 175 – 650 RPM, using a mild, neutral (pH 7 to 8) cleaner such as TASKI profi, Johnson Stride, or Butchers Hot Springs to clean the flooring. For normal wet cleaning use a 3M 5100 Red Buffer Pad for scrubbing. To remove excessive dirt, scuffs, or light scratches, wet buff using a 3M 5300 Blue Cleaner Pad. Follow the

manufacturer's recommendations for dilution and use. DO NOT flood the floor. Allow the cleaning solution to stand for approximately 10 to 15 minutes; however, DO NOT allow the solution to dry. Wet vacuum or mop up the residue. Rinse with clean, cool water, remove the water, and allow the flooring dry thoroughly.

7.2.3 Dry Buffing

After wet cleaning, dry buffing can be performed on a routine basis to maintain the surface luster. Sweep, dust mop, or vacuum the floor to remove dirt and other particulate before dry buffing. Dry buff with a low speed rotary buffer, 175 – 650 RPM, using a 3M 5100 Red Buffer Pad followed with a 3M 4100 White Super Polish Pad to achieve the desired glossy appearance. DO NOT heel the buffing machine. Use the wet cleaning procedure described in "Wet Cleaning" to remove the build up and for restorative maintenance.

8. Technical Services

8.1 Technical Assistance

Technical service information and assistance may be obtained by calling Flexco® Customer Service at 1-800-633-3151 or by visiting www.flexcofloors.com.

8.2 Sample

Samples may be obtained by calling Flexco® Customer Service at 1-800-633-3151 or by visiting www.flexcofloors.com.

9. Availability and Cost

Products are available through Flexco® distributors. Contact Flexco® Customer Service at 1-800-633-3151 or visit www.flexcofloors.com for a distributor near you.

10. Limited Warranty

Flexco® Corporation manufactures and markets its floor products under the trade name Flexco®. Flexco® Appeal^{1M} Solid Vinyl Tile is warranted for a period of one year from date of installation to be free of defects in material and workmanship. Flexco® has a ten (10) year Limited Wear Warranty on the 1/8" thick Flexco® Appeal^{1M} Solid Vinyl Tile, if installed, maintained, and used strictly in accordance with Flexco®'s written instructions and installed with the recommended Flexco® adhesive. Instructions may be obtained from a Flexco® distributor or by writing Flexco®, Attention: Sales Service Manager, P.O. Box 553, Tuscumbia, Alabama, 35674. Notice of any defect must be made in writing to Flexco® within thirty (30) days after buyer learns of the defect. No merchandise is to be returned prior to Flexco®'s inspection and written approval. Buyer's sole and exclusive remedy against Flexco® and Dealer for claims arising hereunder for any and all losses and damages resulting from any cause shall be a pro rata credit based on the period remaining in this Limited Warranty toward the purchase of new Flexco® Appeal^{1M} Solid Vinyl Tile. Replacement credit shall be equal to the proportion of Limited Warranty time remaining multiplied by the current price of Flexco® Appeal^{1M} Solid Vinyl Tile. In no event shall Flexco® be liable for incidental or consequential damages, even if some other provision of this Limited Warranty is unenforceable. Buyer waives all other claims and remedies of any nature. Flexco® Appeal^{1M} Solid Vinyl Tile is not designed for use in or near commercial kitchens or for outdoors use. Flexco® shall have no liability whatsoever to Buyer in the event the goods become defective if such defect is caused in whole or part by cuts, tears, vandalism, fire, willful destruction, damage from high heels, spiked footwear, improper installation, improper maintenance, subfloor and/or substrate irregularities, accidents, natural causes, or acts of God. Flexco® will not be liable for labor costs or lost profits resulting from the use of or inability to use the product. Flexco® will not be liable for labor costs for material that is installed with obvious defects. Products designated as "seconds", "mill run", "non-conforming", not being of first quality, are sold as-is and Flexco® makes no warranties whatsoever, expressed or implied, with respect thereto, including warranties of merchantability or fitness for a particular use. *These warranties are expressly in lieu of any other warranties expressed or implied, including, but not limited to any implied warranty of merchantability or fitness for a particular purpose.* By retaining Flexco®'s merchandise for more than five (5) days after receipt of such merchandise, Buyer agrees that it accepts the terms of this Limited Warranty and that there are no warranties or rights beyond those contained herein. All claims must be made in writing and sent to Flexco®, Attn: Claims Manager, P.O. Box 553, Tuscumbia, Alabama, 35674. All claims for surface defects or variations in color or pattern must be delivered to Flexco® in writing before the product is installed. Flexco® will not accept the return of any product without prior written approval of the Flexco® Claims Department. Revision: 01/19/06