

Section 9
Resilient Flooring
Health Design Vinyl Tile

1. Product Nomenclature
Health Design Vinyl Tile

2. Company Information

Flexco®

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3. Product Description

3.1 Basic Application

Flexco® Health Design Vinyl Tile is an Anti-Fungal, Anti-Microbial, resilient, homogeneous solid vinyl tile designed to meet both the demands and styling of the today's health care industry. Health Design Vinyl Tile combines the durability of homogeneous vinyl with handsome styling including eighteen health care orientated colors and chip patterns, and is suitable for heavy traffic areas. The pure virgin vinyl composition provides excellent resistance to abrasion, chipping, cracking, and permanent indentations, and yet it is flexible for fast and economical installations. An important feature of Health Design Vinyl Tile's tough, non-porous, solid construction is that it requires low maintenance and no floor finish. Health Design Vinyl Tile is an excellent choice for use in healthcare, retail, office buildings, hospitals, laboratories, schools, factories, and airports, just to mention a few. This product is ideal in areas that require resistance to staining by fungi and *Streptovorticillium reticulum* (a pink stain organism). Flexco® Health Design Vinyl Tile may also be "heat welded" and "flash-coved" producing a seamless Unitized Installation. To compliment the Health Design Vinyl Tile, coordinating wall base and accessories are available.

3.2 Product Construction

Flexco® Health Design Vinyl Tile is a solid, homogeneous vinyl tile manufactured using first quality, virgin raw materials. Special ingredients are added to provide excellent light stability, chemical resistance, abrasion resistance. Health Design Vinyl Tile also includes both Anti-Fungal and Anti-Microbial properties. The smooth, hard surface is aesthetically pleasing and does not require the use of a floor finish. This resilient, monolithic tile is uniform with respect to color, pattern effect, and composition, throughout the thickness of the tile. This product contains a microbial that will pass the fungi and pink stain test. Flexco®'s new high technology cutting system assures a Precision Squared tile for a precision fit.

3.3 Product Types

Gauge: 0.080" (2mm) nominal

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 3/4" x 36 3/4" untrimmed slabs are available. All sizes available are nominal.

Tile Colors: Currently available in 18 colors. Custom color matching is available.

Tile Packaging: 12" x 12" (70 sq/ft. per carton), 24" x 24" (80 sq/ft. per carton) & 36" x 36" (90sq/ft per carton).
Pre-grooved (Beveled) Edges: Available in 24" x 24" (609.6mm x 609.6mm) and 36" x 36" (914.4mm x 914.4mm) for Heat Welded Unitized System.
Tile Weight: 0.8 lbs. nominal per square foot.

3.4. Vinyl Welding Rods

3.4.1 Vinyl Welding Rod Colors: Color coordinating Vinyl Welding Rods are available. The wide range of vinyl welding rod colors offers the ability to mix and match or coordinate other products within the Flexco product line to create seamless color ways within a space!

3.4.2 Vinyl Welding Rod Coverage: 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 0.160" (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%

4.6 ASTM D 2047, Static Coefficient of Friction (Slip Resistance): Passes, > 0.60 dry flat surface using Standard Neolite Sensor.

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

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

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

4.10 FED-STD-209E, Airborne Particulate Cleanliness: Excellent, Test results available

4.11 EN 425, Castor Chair Test: Passes

4.12 ASTM D 3389, Abrasion Resistance: Excellent

4.13 FMVSS 302, Title 49, Part 571, Flammability of Interior Materials: Passes

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

4.15 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

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

5. Product Limitations

Flexco® Health Design 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. Flexco® 77 Solvent Free Epoxy Flooring Adhesive must be used for interior installations below grade or where the subfloor is in contact with the earth, in areas where the flooring will be subjected to rolling loads, lateral shear stresses, and over 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® Health Design Vinyl Tile may have manufacturing sheen or shade variances until initial maintenance is performed. Vinyl tile may be stained if it is allowed to remain in contact with rubber products that may contain staining ingredients such as tires, casters, and walk-off mats. Consult the chemical resistance test data sheets or Flexco® Customer Service to assure that disinfectant, cleaning agents, or other chemicals that may come in contact with the flooring will not produce permanent discoloration and/or deterioration. Health Design Vinyl Tile is not to be used in or near commercial kitchens or in areas exposed to animal fats, greases, oils, solvents, strong detergents, or where there is excessive moisture. For interior use only with temperatures ranges maintained from 65° F (19°C) and 85°F (30°C). Follow all local, state, and federal safety standards and practices.

6. Installation

6.1 General Preparation and Conditioning

First read Flexco's® Health Design Vinyl Tile 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. Store products in a dry area protected from the weather on a smooth, flat, dry surface with temperatures maintained between 65° F (19°C) and 85°F (30°C). 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. The installation area, substrate, tile, adhesive, and welding beads, if required, are to be maintained between 65° F (19°C) and 85°F (30°C) for at least 48 hours before installation, during installation, and 48 hours after the installation. Maintain room temperatures between 65° F (19°C) and 85°F (30°C) thereafter. Tile should be loose laid in the room or area prior to spreading of adhesive to determine the proper layout to assure 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 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 assure 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 tile 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 (190C) and 850 F (300C). If radiant-heated floors have cooled after installation, a gradual increase in temperature is required to prevent adhesive bond from being adversely affected. 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 using 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 Subfloor/Substrates: All subfloors/substrates must be inspected prior to installation. All substrates must be clean, smooth, permanently dry, flat, 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, any other extraneous coatings, films, materials and all other foreign matter which might interfere/restrict proper adhesive

bonding. DO NOT use sweeping compounds, solvents, citrus adhesive removers, or acid etching to clean the sub-

strate. 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. In renovation or remodel work, remove all existing *adhesive residue so that 100% of the overall area of the original subfloor/substrate is exposed. Follow The Resilient Floor Covering Institute's (RFCI) "Recommended Work Practice for Removal of Existing Floor Covering and Adhesive, and all applicable industry, local, state, and federal standards. 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, excluding gypsum based or plaster based levelers or patching compounds. * Some previous manufactured asphaltic "cutback" contained asbestos. For removal instructions, refer to the Resilient Floor Covering Institute's publication "Recommended Work Practices for Removal of Resilient Floor Covering".

6.2.2 Concrete Substrates: Concrete substrates on all Grade Levels 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. CAUTION: Calcium Chloride test cannot predict long-term moisture conditions of concrete slabs. Moisture testing only indicates moisture conditions at the time the tests are performed. Before conducting a Calcium Chloride test, the installation area must be maintained between for 65° F (19°C) and 85°F (30°C) or at least 48 hours prior to testing, during testing and thereafter. In addition, the concrete's temperature range must also be identical to that of the installation area. Conduct three Calcium Chloride test for the first 1,000 sq. ft. and one additional test for each 1,000 sq. ft. or fraction thereof per grade level (on, below or above grade). The moisture emission shall not exceed 4.0 pounds per 1000 square feet per 24 hours. If the substrate does not meet the moisture 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. 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 8 is an indication of a potential problem and the concrete must be neutralized by rinsing with clear water. Apply clear water with a mop and allow to dry. Re-rinse with clear water, allow to dry and retest to ensure pH level is within acceptable range of 5 to 8 on the pH scale. Continue to neutralize until the pH level is acceptable. The testing of concrete for alkalinity indicates the degree of alkalinity only at the time the test is conducted, and cannot be used to predict long-term conditions. 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 sheet seam curling. DO NOT install over burnished (slick troweled) concrete to avoid adhesive and underlayment patch or self-leveling bonding problems due to the non-porosity of the concrete finish. Corrective measures such as bead blasting (shot blasting) or scarifying must be performed prior to installation. The concrete slab must be of good quality, standard density concrete with low water/cement ratios consistent with placing and finishing requirements, having a maximum slump of 4", a minimum compressive strength of 3500 psi, and following the recommendations of ACI Standard 302. 1R-96 for class 2 or call 4 floors and the Portland Cement Association's recommendations for slabs on ground. Joints such as expansion joints, contraction joints, isolation joints, saw cuts, control joints, grooves 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 non-moving surface cracks, depressions, 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 1 17R. 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: 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. Wood subfloor movement, flexing or instability will cause the flooring installed to release, buckle or become distorted. Do not proceed with the installation until corrective measures have been made. The warranties, performance, installation, and used 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, 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 Terrazzo and Ceramic Floors: Terrazzo and ceramic floors to be used as subfloors/substrates are to follow the procedures recommended for concrete in 6.2.2. Ceramic tile must be solidly adhered and all loose tiles must be removed and repaired or replaced. Ensure all glazed, sealed, smooth, and/or shiny surfaces are properly sanded and cleaned. 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: Metal floors to be used as subfloors/substrates must be thoroughly cleaned of any residue, oil, rust, and oxidation and properly sanded/grinded to provide a smooth, level, clean substrate to receive the resilient flooring. The flooring must be installed within 12 hours after sanding/grinding to prevent the metal flooring from re-oxidizing. 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. Caution: The installation of stair-treads, risers or other flooring material will not prevent deterioration of metal substrates from occurring.

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 the interior installation of Flexco® solid vinyl tile. This adhesive contains antimicrobial protection that protects the dried/applied adhesive from mold, mildew, and bacteria that cause odors and product degradation. Flexco® 16/86 Multi-Performance Tile and Tread Adhesive may be used on porous and some non-porous substrates on grade or above grade where the subfloor is not in contact with the earth. Use of this adhesive is limited to casual foot traffic, in areas where there are no rolling loads or lateral shear stresses, and only in areas where the temperature is maintained between 650 F (190C) and 850 F (300C). Spread coverage using a 1/16" x 1/16" x 1/16" flat "V" notched 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 (210C) in an unopened container. Remove wet adhesive with a

soft, clean cloth dampened with warm soapy water. Dried adhesive can be removed using a soft, clean cloth dampened with mineral spirits, rinse with clean water. 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. Flexco® 16/86 Multi-Performance Tile and Tread Adhesive Calculated VOC's according to California Rule #1168: 0 grams per liter of coating.

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. Flexco® 77 Solvent Free Epoxy Flooring Adhesive must be used in areas subjected to rolling loads, lateral shear stress and over 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” notched trowel is approximately 125 square feet on a porous substrate. Coverage will vary according to the type of surface, surface texture, spreading angle, and adhesive temperature. Over non-porous or smooth substrates, a 1/32” x 1/16” x 1/32” “U” notch trowel is required. Adhesive is available in 1-quart and 1-gallon pails.). Caution: If too much adhesive is applied, oozing at seams, air-bubbles, adhesive displacement, and telegraphing may occur along with adhesive displacement when the floor is rolled or exposed to rolling loads and lateral shear stress, resulting in loose and unsightly areas. Therefore, test trowel size and flooring prior to installation to avoid the above noted potential problems. Shelf life is one year @ 700 F (210C) 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, Spanish, and French. Read all of the product and safety information concerning the adhesive and any other chemicals or cleaning agents prior to installation. Flexco® 77 Solvent Free Epoxy Flooring Adhesive Calculated VOC's according to California Rule #1168: Flexco #77 Part A: < 30 grams per liter of coating. Flexco #77 Part B: < 30 grams per liter of coating.

6.4 Adhesive Application and Product Installation

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

Read all installation literature before proceeding. Must have adequate ventilation. Pour the contents of the container onto the substrate and spread evenly using a 1/16” x 1/16” x 1/16” flat “V” notched 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 set up 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. For non-porous substrates, allow the adhesive to dry to the touch so that there is 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 with 3M 5300 Blue Cleaner Pad using a 175-3 50 RPM buffer. 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 assure 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 assure 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 mars, marks, indentations and other damage.

6.4.2 Health Design 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. 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 assure proper adhesive coverage. 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. Over non-porous or smooth substrates, a 1/32" x 1/16" x 1/32" "U" notch trowel is required. Coverage will vary according to the type of surface, surface texture, spreading angle, and adhesive temperature. 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 assure 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 with 3M 5300 Blue Cleaning Pad using a 175-350 RPM buffer. When laying the flooring, either 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. 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 assure there has been no shifting of the tiles and that there is no adhesive on the surface of the tile. 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 cove cap at desired height. Install metal inside and outside corners, making sure cove cap and corner height match. Install Flexco #195 Cove Stick Fillet, at junction of wall and floor to give you the desired radius. Measure and cut in your flash cove. Using a heat gun, heat the tile uniformly over the entire length and bend to desired ra-

dius, making sure you have good contact with the cove stick. 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 pre-formed 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 16/86 Multi-Performance Tile and Tread Adhesive or the 77 Solvent Free Epoxy Flooring Adhesive on the floor and allow the adhesive to overflow on the cove strip. Weld the flash cove tile to the field tiles and up the wall. Trim flash cove seams using an X-ACTO knife with a blade to make it easy to trim inside and outside corners.

6.6 Unitized Heat Weld Procedure

Install Flexco® Contract 24" x 24" or 36" x 36" standard or pre-grooved tile in the same manner as conventional 12" x 12" tile. Do not allow the adhesive to bleed at the seam. The welding bead will not weld to adhesive. If specifications call for "Flash Cove," allow minimum of 6" flash up the wall and extending at least 6" on the floor, refer to Flash Cove Procedure. DO NOT heat weld until the epoxy adhesive has cured, approximately twenty-four (24) hours after the installation of the tile. Temperature of the tile and welding bead prior to and during installation is to be between 65° F (19°C) and 85°F (30°C). 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, set router blade to cut one-half to three-fourths the thickness of the tile. After the grooving is complete, use a hot air welding gun, insert the Flexco® Vinyl Welding Bead, 0.160" in diameter, through the opening of the high speed welding tip into the routed groove in the tile. Practice the welding technique by using a piece of scrap tile to determine the temperature setting of the

heat gun and welding speed to achieve a successful bond. Follow the recommended welding procedures provided by the welding gun manufacturer. You can see the tile and bead flowing together while welding if the settings are correct. 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 spatula knife, using a trim plate on the first trim. Perform a second trim using only the spatula knife to create a smooth, level surface.

7. Product Maintenance and Optional Sealer or Floor Finish Application

7.1 Initial Maintenance

7.1.2 Liquid/Solution Cleaning

Do not scrub, buff or mop the tile for at least 48 hours after installation to allow the adhesive and heat welds to properly cure. Do not flood the tile when cleaning and do not allow the cleaning solution or topical moisture to work its way beneath the tile which can result in an adhesive and/or tile failure. Remove any covering that may have been used to protect the floor. The tile must be properly cleaned before it is released for normal use. First, Sweep and vacuum to remove dirt and other particulates, then damp mop the flooring with a mild, neutral pH cleaner such as Spartan Chemicals' Damp Mop (800-537-8990) or Green Solutions All Purpose Cleaner or Neutral Disinfectant Cleaner. DO NOT use highly alkaline or acidic cleaners. DO NOT use sweeping or cleaning agents containing oils or solvents. Rinse the flooring immediately after mopping with clean warm water and remove rinse water with a wet/dry vacuum and allow to dry completely before exposing to traffic. DO NOT flood the flooring! To remove excessive dirt, scuffs, or light scratches, after the installation & cleaning, wet buff using a low speed 175- 350 RPM rotary buffer with a 3M 5300 Blue Cleaner Pad. Dry buff with a 3M 5100 Red Buffer Pad followed with a 3M 4100 White Super Polish Pad to achieve the required glossy appearance. Always check for compatibility and performance prior to cleaning by utilizing uninstalled material or test in an inconspicuous area before proceeding to determine if the desired results can be achieved without distorting or having an adverse effect on the tile. There are several alternative maintenance systems available from Spartan Chemical (800/537-8990) if a sealer, satin sheen or high gloss finish is desired. Spartan Chemical currently recommends Dura Prime for sealing or Dura Gloss or Green Solutions Floor Seal and Finish. When applying either sealers or finishes, product must be applied in both directions. Caution: Applying sealers or finishes will darken the tile's original color. When applying sealers or finishes always check first for compatibility, bonding and tile color darkening on a scrap piece of tile to ensure the desired results and appearance is achieved. The floor care product manufacturer will assist you in determining the best maintenance program. Caution: Some germicides, disinfectants, cleaning agents, floor main-

tenance products, and pesticides may stain or damage the surface of the 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. The use of floor finishes or sealers may reduce the slip resistant of the tile. Flexco Floors will not be held liable for finishes or sealers applied directly to tile causing them to become slippery and/or reducing the tile's slip resistance! Caution: When wet, the tile will become slippery; therefore, use the appropriate warning signs on the floor to eliminate foot or other traffic. After a period of time, the build up of floor finish or sealer will need to be removed. Currently, Spartan Chemical recommends LOE Stripper or Green Solutions Floor Finish Remover. Caution: Contact Spartan Chemical before applying products to verify recommendations for stripping tile. Some strippers may have an adverse effect on the tile. Always test first to ensure the tiles are not affected and the desired results can be achieved prior to applying strippers of any kind. Caution: When wet, the flooring will become slippery; therefore, use the appropriate warning signs on the floor to eliminate foot or vehicular traffic

7.1.3 Dry Buffing

DO NOT dry buff until 48 hours after the installation and after the tile has been liquid/solution 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 – 350 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

DO NOT scrub or mop the flooring for at least 48 hours after the installation to allow the adhesive and heat weld-ing beads to properly cure. Do not flood the tile when cleaning and do not allow the cleaning solution or topical water to work its way beneath the tile which can result in an adhesive and/or tile failure. The flooring must be properly cleaned and allowed to dry before exposing for normal use. Insufficient cleaning will reduce the wear life and appearance of the tile. We suggest the first month should be used as a test period to assess the best procedure for your continued maintenance program. The amount of traffic required is directly related to the amount and type of traffic and type of particulates deposited on the floor. Sweep or vacuum daily to remove dirt or other particu-lates. Damp mop or scrub with a commercial 175 RPM scrubber using a mild, neutral pH cleaner such as Spartan Chemical's (800-537-8990) Damp Mop or Green Solutions All Purpose Cleaner or Neutral Disinfectant Cleaner. Rinse the flooring immediately after mopping with clean warm water and remove rinse water with a wet/dry vacu-um allow it to dry thoroughly before exposing to traffic. After cleaning, regular buffing with a 3M 4100 White Super Polish Pad will help to maintain the attractive appearance. Caution: Some germicides, disinfectants, clean-ing agents, floor maintenance products, and pesticides may stain or damage the surface of solid vinyl tile; there-fore, test the products to assure they will stain or damage the tile. Periodic cleaning with a 3M 5300 Blue Cleaner Pad may be required to prevent buildup of germicidal cleaners or other cleaning solutions. DO NOT heel the buff-ing machine. Spills of any type must be removed immediately to help prevent staining or permanent damage. Con-tact Flexco's Customer Service to obtain information concerning stain resistance to various chemicals and prod-ucts. DO NOT use highly acidic or highly alkaline cleaners. DO NOT use sweeping or cleaning agents containing oils or solvents. Always check for compatibility and performance prior to cleaning by utilizing uninstalled material or test in an inconspicuous area before proceeding to determine if the desired results can be achieved without dis-torting or having an adverse effect on the tile

Caution: When wet, vinyl flooring will become slippery; therefore, use the appropriate warning signs on the floor to eliminate foot or vehicular traffic.

8. Technical Services

8.1 Technical Assistance

Technical service information and assistance may be obtained by calling Flexco® Customer Service or by visiting www.flexcofloors.com.

8.2 Samples

Samples may be obtained by calling Flexco® Customer Service or by visiting www.flexcofloors.com.

9. Availability and Cost

Available through Flexco® distributors. Contact Flexco® Customer Service or visit www.flexcofloors.com. for a list of distributors.

10. Limited Warranty

Flexco® Flooring manufactures and markets its product under the trade name Flexco Health Design Tile is warranted for a period of one (1) year from date of installation to be free of defects in material and workmanship, and a ten (10) year Limited Wear Warranty on the 0.080" thick Flexco Health Design Tile . Flexco Floors will not warranty Health Design Tile against fading or discoloration when exposed to direct sunlight or indirect sunlight. This Limited Warranty only applies to Health Design Tile which has been installed, maintained, and used strictly in accordance with Flexco's written instructions and is valid only under normal wear and traffic conditions in a use for which it was designed. 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 for breach of this Limited Warranty shall be a pro rata credit, based on the period remaining in this Limited Warranty, toward the purchase of new Health Design Tile , or in the event Health Design Tile is not available, other similar or equal Health Design Tile . Replacement credit shall be equal to the proportion of Limited Warranty time remaining multiplied by the current price of Health Design Tile , or the last price if Health Design Tile is not available. In no event shall Flexco Floors 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 against Flexco Floors, whether statutory, based in common law or in equity, and including, but not limited to, direct, indirect, special, incidental, and consequential damages. In order to use this Limited Warranty, Buyer must present this Limited Warranty and proof of time of purchase to Buyer's Flexco representative. 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, improper installation, or improper maintenance, accident or act of God. This Limited Warranty is valid only if Health Design Tile is installed pursuant to the Limited Warranty, using Flexco's recommended adhesive. 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. Health Design Tile is not designed for use in or near commercial kitchens. Read Health Design Tile's Data information concerning Product Limitations, Installation, and Maintenance available from a Flexco Distributor or Flexco's Customer Service Representative.