

# Evolving Styles Tile & Sheet Installation

## COMPANY INFORMATION

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## INSTALLATION

### 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 including recommended adhesive are to be delivered to the installation location in its original packaging with labels intact. **DO NOT** stack pallets of material as this will cause damage. If rolls are being used, ensure the rolls are stored vertically if possible. **DO NOT** lean against objects that can cause indentation. If the rolls are to be stored horizontally, ensure the rolls are placed on a smooth, level and dry surface, which supports the entire width of the roll. 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 upon arrival to the installation area and at least 48 hours prior to installation. For proper acclimation, 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 being contaminated and to protect the product from damage. The installation area, tile, adhesive and welding rods are to be maintained between 65°F (19°C) and 85°F (30°C) for a minimum of 48 hours prior to installation. These temperature ranges must be maintained throughout the installation phase and thereafter. If temperatures other than Flexco's requirements become an issue, contact the Flexco Technical Service Department prior to installation. **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 the recommended Flexco 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. **Caution:** Close the area to traffic during flooring installation and 48 hours after 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 clean soft cloth dampened with clean water or denatured alcohol and allow to completely dry. Tile may be installed over radiant heated floors, provided the surface temperature is maintained between 65°F (19°C) and 85°F (30°C). If radiant-heated floors have cooled after installation, a gradual increase in temperature is required to prevent adhesive bond from being adversely affected. 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.

### 2. Subfloor/Substrate Inspection and Preparation

#### 2.1 General

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 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. In renovation or remodel work, remove all existing adhesive residue so that 100% of the overall area of the original subfloor/substrate is exposed (**Caution:** Some previous manufactured asphaltic “cutback” contained asbestos). 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.

## 2.2 Concrete Substrates

Concrete substrates on all Grade Levels must be tested in accordance with ASTM F 1869 Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride or ASTM F 2170 Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs using *in situ* Probes to quantitatively determine the amount of moisture vapor emission at least one week prior to the installation. **Caution:** ASTM F 1869 or ASTM F 2170 tests cannot predict long-term moisture conditions of concrete slabs. Moisture testing only indicates moisture conditions at the time the tests are performed. Before conducting ASTM F 1869 or ASTM F 2170 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 tests 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 Vapor Emission Rate shall not exceed 4.0 lbs and Relative Humidity Test shall not exceed 70% when using the Flexco 16/86 Multi-Performance Tile and Tread Adhesive. The Vapor Emission Rate shall not exceed 5.0 lbs and Relative Humidity Test shall not exceed 75% when using the Flexco Spray-Grip Adhesive. The Vapor Emission Rate shall not exceed 5.0 lbs and Relative Humidity Test shall not exceed 75% when using the Flexco 77 Solvent Free Epoxy Adhesive. If the substrate does not meet the above noted requirements, the flooring shall not be installed until the problem has been corrected. **DO NOT** install 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 9 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 thoroughly dry. Re-rinse with clear water, allow to thoroughly dry and retest to ensure pH level is within acceptable range of 5 to 9 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 releasing, tile peaking and/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 and/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 and/or other methods 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 A157.1, *Recommended Practice for Concrete Floor and Slab Construction*) for the preparation of concrete to receive resilient flooring.

### 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 and/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 uses are the responsibility of the wood subfloor manufacturer and/or contractor. **DO NOT** use plastic or resin filler to patch cracks. **DO NOT** use cement or rosin coated nails/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).

### 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).

### 2.5 Metal Floors

Metal floors to be used as subfloors/substrates must be thoroughly cleaned of any residue, oil, rust and/or 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. **Caution:** The installation of stair-treads, risers or other flooring materials will not prevent deterioration of metal substrates from occurring.

## 3. Adhesive Information

### 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 and/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 65°F (19°C) and 85°F (30°C), and in areas that will not be subjected to moisture or other liquids. **DO NOT** use Flexco 16/86 when installing Repel™ Oil and Grease Resistant compound. The Flexco 77 Solvent Free Epoxy Flooring Adhesive is required on all Repel™ Oil and Grease Resistant Compound installations, metal and some other non-porous substrates and more severe service conditions. The approximate coverage (spread) rate using a 1/16" x 1/16" x 1/16" square notch trowel is 150 square feet per gallon 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 70° F (21°C) 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 0° F (18°C); 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.

### 3.2 Flexco 77 Solvent Free Epoxy Adhesive

Flexco 77 Solvent Free Epoxy 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 and/or above grade. The Flexco 77 Solvent Free Epoxy 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 Flexco 77 Solvent Free Epoxy Adhesive must be used for all Repel™ Oil and Grease Resistant Compound installations. When used on non-porous substrates, the adhesive must be allowed to "tack up", but not allowed to cure. The approximate coverage (spread) rate using the 1/32" deep x 1/16" wide x 1/32" flat "U" notch trowel is 175 square feet on a smooth substrate. Using the 1/16" x 1/16" x 1/16" flat "V" notch trowel, the approximate coverage (spread) rate is 150 square feet. Coverage will vary according to the type of surface, surface texture, spreading angle and/or adhesive temperature. Adhesive is available in 1-quart and 1-gallon units. Shelf life is one year at 70° F (21°C) 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. **Caution:** A bond failure will occur if the epoxy is not properly mixed. Label information is in English and Spanish. Read all MSDS information and follow the proper safety procedures. Flexco 77 Solvent-Free Epoxy Adhesive Calculated VOC's according to California Rule #1168: Flexco 77 Part A: 1.3 grams per liter of coating. Flexco 77 Part B: 2.4 grams per liter of coating. Flexco 77 Part A & Part B Mixed Calculated VOC's: 1.21 grams per liter of coating.

## 4. Adhesive Application and Product Installation

### 4.1 Evolving Styles™ Tile Installation using Flexco 16/86 Multi-Performance Tile and Tread Adhesive

Read all installation literature before proceeding. **DO NOT** use Flexco 16/86 when installing Repel™ Oil and Grease Resistant compound. 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. Follow safety precautions on the adhesive label and MSDS. Ensure there is adequate ventilation while working with the adhesives. 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, 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. Allow the adhesive on the porous substrate to "flash off" for approximately 10 minutes before installing the flooring. On non-porous substrates, allow the adhesive to become dry to the touch so that there is very little transfer of adhesive to the finger. (**Note:** A 1/32" x 1/16" x 1/32" square notch trowel may be required on some semi-porous or non-porous substrates). **Caution:** "Tack up" time, open time, and curing characteristics will vary upon the type of substrate, substrate temperature, ambient temperature, humidity and/or proper conditioning of the adhesive. Allowing the adhesive to remain open too long will result in bond failure. When laying the flooring, use a kneeling board, or for best results, work off the flooring whenever possible to avoid shifting of the tile. Avoid tracking wet 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 or denatured alcohol. Tiles may be laid in a square or diagonal field. As the mottle in each tile has a definite machine direction, the preferred method of installation is to lay the tiles in a parquet pattern. Each tile is laid where the machine direction of the mottle is at a right angle, 90 degrees, to the machine direction of the mottle in each of the tiles placed along each of its four sides. Installing the tiles in this method breaks up the mottling to give a consistent look throughout the installation. As parquet is the preferred method, the tiles may also be installed with the mottle all going in the same direction without loosing any functionality of the product. **DO NOT** fit the tiles together forcibly as using excessive pressure to fit the tiles can cause peaking of the seams. During installation, periodically lift a tile to ensure proper adhesive transfer. There should be at least 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 the entire main aisle flooring has been installed to begin laying the borders. Lay the border tiles within the adhesive open time. Slowly 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. Slowly 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 traffic for at least 3 days. Protect flooring against scuffing, scratching, indentations and other damage until released to the end user.

#### 4.2 Evolving Styles™ & Repel™ Tile Installation using Flexco 77 Solvent Free Epoxy Adhesive

Read all installation literature before proceeding. 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. Follow safety precautions on the adhesive label and MSDS. Ensure there is adequate ventilation while working with the adhesives. **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 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 for a minimum of 3 minutes with drill or 5 minutes by hand. After mixing, there must be no streaking of the two parts in the adhesive; it will be consistent cream color. **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 1/32” x 1/16” x 1/32” “U” notch trowel or 1/16” x 1/16” x 1/16” flat “V” notch trowel while being careful to leave no puddles of adhesive. (**Note:** A 1/32” x 1/16” x 1/32” square notch trowel may be required on some semi-porous or non-porous substrates. 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). 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. Allowing the adhesive to remain open too long will result in bond failure. When laying the flooring, use a kneeling board, or for best results, work off the flooring whenever possible to avoid shifting of the tile. Avoid tracking wet 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”. 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 adhesive with a cloth dampened with water or denatured alcohol before the epoxy cures. **DO NOT** allow the epoxy to cure on the surface of the tile. Tiles may be laid in a square or diagonal field. As the mottle in each tile has a definite machine direction, the preferred method of installation is to lay the tiles in a parquet pattern. Each tile is laid where the machine direction of

the mottle is at a right angle, 90 degrees, to the machine direction of the mottle in each of the tiles placed along each of its four sides. Installing the tiles in this method breaks up the mottling to give a consistent look throughout the installation. As parquet is the preferred method, the tiles may also be installed with the mottle all going in the same direction without loosing any functionality of the product. **DO NOT** fit the tiles together forcibly as using excessive pressure to fit the tiles can cause peaking of the seams. During installation, periodically lift a tile to ensure proper adhesive transfer. There should be at least 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 the entire main aisle flooring has been installed to begin laying the borders. Lay the border tiles within the adhesive open time. Slowly 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. Slowly 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 traffic for at least 3 days. Protect flooring against scuffing, scratching, indentations and other damage until released to the end user.

#### 4.3 Evolving Styles™ Sheet Installation using Flexco 16/86 Multi-Performance Tile and Tread Adhesive

Read all installation literature before proceeding. **DO NOT** use Flexco 16/86 when installing Repel Oil and Grease Resistant compound. Follow safety precautions on the adhesive label and MSDS. Ensure there is adequate ventilation while working with the adhesives. Unroll the sheet and allow it to condition before fitting and cutting. If more than one roll is used, ensure rolls are of the same roll number sequence. To reduce roll material side shading, Flexco recommends that flooring seams must be installed in reverse order. Allow enough material for doorways, closets, alcoves, flash coving, etc. Allow an extra 3" for trimming or more if necessary for walls that are not square. Dry lay the flooring to ensure desired aesthetics. Seams should be placed in the least conspicuous places and preferably in the least traveled areas. Ensure seams are approximately 6" away from any seams in the underlayment or substrate. Seams may be double cut or underscribed. When double cutting seams, allow an overlap of approximately 1". Use a straight edge as a guide and cut through both sheets using a sharp utility knife, while holding the knife at a right angle to the sheet to ensure a straight perpendicular cut. Double cut the seams before adhesive application. When underscribing seams, one of the adjoining factory edges must be removed using a straight edge to provide a straight edge for the underscribing tool to follow. Removing the factory edge should be performed prior to adhesive application. **Caution:** Ensure the sheet does not move when double cutting or underscribing the seams and during the application of the adhesive. If the sanded back of the sheet becomes soiled prior to installation, clean with a soft cloth dampened with clean water or denatured alcohol, rinse and allow to thoroughly dry. Fold back the sheet in the machine direction. Pour the adhesive onto the substrate where the sheet is folded back and spread evenly onto the porous substrate using a 1/16" x 1/16" x 1/16" square notch trowel, 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 sheet is installed, which would result in a bond failure. Allow the adhesive on the porous substrate to "flash off" for approximately 10 minutes before installing the flooring. On non-porous substrates, allow the adhesive to become dry to the touch so that there is very little transfer of adhesive to the finger. (**Note:** A 1/32" x 1/16" x 1/32" square notch trowel may be required on some semi-porous or non-porous substrates). **Caution:** "Tack up" time, open time, and curing characteristics will vary upon the type of substrate, substrate temperature, ambient temperature, humidity and/or proper conditioning of the adhesive. Allowing the adhesive to remain open too long will result in bond failure. When laying the flooring, use a kneeling board, or for best results, work off the flooring whenever possible to avoid shifting of the tile. Avoid tracking wet 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 or denatured alcohol. **DO NOT** fit the sheets together forcibly as using excessive pressure to fit the sheets can cause peaking of the seams. During installation, periodically lift the sheet to ensure proper adhesive transfer. There should be at least 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 the entire main aisle flooring has been installed to begin laying the borders. Lay the border tiles within the adhesive open time. Slowly 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. Slowly 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 traffic for at least 3 days. Protect flooring against scuffing, scratching, indentations and other damage until released to the end user.

#### 4.4 Evolving Styles™ & Repel™ Sheet Installation using Flexco® 77 Solvent Free Epoxy Adhesive

Read all installation literature before proceeding. Follow safety precautions on the adhesive label and MSDS. Ensure there is adequate ventilation while working with the adhesives. Unroll the sheet and allow it to condition before fitting and cutting. If more than one roll is used, ensure rolls are of the same roll number sequence. To reduce roll material side shading, Flexco recommends that flooring seams must be installed in reverse order. Allow enough material for doorways, closets, alcoves, flash coving, etc. Allow an extra 3" for trimming or more if necessary for walls that are not square. Dry lay the flooring to ensure desired aesthetics. Seams should be placed in the least conspicuous places and preferably in the least traveled areas. Ensure seams are approximately 6" away from any seams in the underlayment or substrate. Seams may be double cut or underscribed. When double cutting seams, allow an overlap of approximately 1". Use a straight edge as a guide and cut through both sheets using a sharp utility knife, while holding the knife at a right angle to the sheet to ensure a straight perpendicular cut. Double cut the seams before adhesive application. When underscribing seams, one of the adjoining factory edges must be removed using a straight edge to provide a straight edge for the underscribing tool to follow. Removing the factory edge should be performed prior to adhesive application. **Caution:** Ensure the sheet does not move when double cutting or underscribing the seams and during the application of the adhesive. If the sanded back of the sheet becomes soiled prior to installation, clean with a soft cloth dampened with clean water or denatured alcohol, rinse and allow to thoroughly dry. Fold back the sheet in the machine direction. **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 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 for a minimum of 3 minutes with drill or 5 minutes by hand. After mixing, there must be no streaking of the two parts in the adhesive; it will be consistent cream color. **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 1/32" x 1/16" x 1/32" "U" notch trowel or 1/16" x 1/16" x 1/16" flat "V" notch trowel while being careful to leave no puddles of adhesive. (**Note:** A 1/32" x 1/16" x 1/32" square notch trowel may be required on some semi-porous or non-porous substrates. 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). 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 20 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. Allowing the adhesive to remain open too long will result in bond failure. **DO NOT** trowel fresh adhesive over previously spread adhesive. The adhesive ridgeline may telegraph through the product. The ridges of the adhesive should be flattened. **DO NOT** drop the sheet into the adhesive. Roll the sheet forward into the adhesive to avoid trapping air. Starting at the center, slowly roll across the width (machine or mottle direction) toward the edges, with a 100-pound 3-section roller staying away approximately 2 inches from the seam area. Then slowly roll along the length of the sheet (machine or mottle direction). Clean the seams of any adhesive. After the first half of the sheet has been laid and rolled, repeat the procedure for the second half. After properly fitting the seams together, roll the seam with the 100-pound 3-section roller and hand seam roller if necessary to make the seam edges level. When laying the flooring, use a kneeling board, or for best results, work off the flooring whenever possible to avoid shifting of the tile. Avoid tracking wet 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 adhesive with a cloth dampened with water or denatured alcohol before the epoxy cures. **DO NOT** allow the epoxy to cure on the surface of the tile. **DO NOT** fit the sheets together forcibly as using excessive pressure to fit the sheets can cause peaking of the seams. During installation, periodically lift the sheet to ensure proper adhesive transfer. There should be at least 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 the entire main aisle flooring has been installed to begin laying the borders. Lay the border tiles within the adhesive open time. Slowly 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. Slowly 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 traffic for at least 3 days. Protect flooring against scuffing, scratching, indentations and other damage until released to the end user.

### 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 wall and floor junction to provide the desired radius. Measure and cut in the flash cove. Bend to desired radius, making sure there is good contact with the cove stick. To make both inside corners and outside butterfly corners, use building felt to create a dry pattern. Cut the flooring to the pattern. Trim it and fit into place. For outside corners, after cutting and grooving your butterfly piece, fit it into place. As an alternative, preformed metal corners may be used. Use a hand groove tool on the seams after the adhesive has cured, prior to welding the two pieces together. Use Flexco 16/86 Multi-Performance Tile and Tread Adhesive for installation on a porous wall surface or the Flexco FlexTape for a non-porous wall surface for installation of flashed-cove pieces. Use either the Flexco 16/86 Multi-Performance Tile and Tread Adhesive or the Flexco 77 Solvent Free Epoxy Adhesive on the floor and allow the adhesive to overflow on the cove strip.

### 6. Unitized Heat Weld Procedure

Flexco Evolving Styles™ Smooth and Repel™ Smooth Tiles are available pre-grooved in 36” x 36” (914.4mm x 914.4mm) sizes; eliminating the need for routing on the job. It may be necessary to hand rout or use an electric grooving machine in some areas depending upon the job condition. **DO NOT** heat weld the seams until the adhesive has cured, approximately twenty-four (24) hours after the installation of the flooring. After installation and prior to heat welding, protect all seams from dirt, topical moisture and cleaning of any kind. **DO NOT** allow the adhesive to bleed at the seam. The Rubber welding rod will not weld to the adhesive. If the installation is to be routed on the job, the preferable method is to use an electric grooving machine with the blade set to cut the groove approximately 66% of the total thickness of the tile (.082”, if the flooring is 1/8” thick). During the grooving process, ensure approximately 50% of material is equally removed from each side of the adjoining pieces of the tile that is being grooved. Practice on a piece of scrap tile to obtain the proper depth. Temperature of the flooring and welding bead prior to and during installation must be between 65° F (19°C) and 85°F (30°C). 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 completed use a hot air welding gun, insert the Flexco Rubber Welding Rod 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 tile 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, dry 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 tile and bead flowing together while welding if the settings are correct. Welding too slowly may char or burn the tile. An excessive welding speed will not allow the bead and tile 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 tile intersections, and then complete the procedure in opposite direction. **DO**

**NOT** Allow traffic until rods have cooled and are trimmed. Allow the welding bead to completely cool and trim the excess bead with a clean, sharp quarter moon spatula knife with an attached clean, 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, a concave skive can result. This can 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.