

# FlexTuft Vulcanized and Non-Vulcanized Rubber Tile 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 FlexTuft. Deliver all materials 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). Do not stack pallets. Remove all plastic wrapping and strapping from the pallets in the installation area at least 48 hours prior to installation. The installation area, substrate, tile, roll flooring and adhesive 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. The natural production process of FlexTuft creates random color tones. Loose-lay tile or roll flooring 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, color, thickness and quality. **DO NOT** install material with obvious defects. Conduct the proper moisture emission and pH testing on the substrate. Proceed with the installation only when the conditions are proper and correct. Perform a bond test using Flexco FlexTuft Adhesive or Flexco 77 Solvent Free Epoxy Flooring Adhesive throughout the area, approximately 50 feet apart 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 or roll flooring from the substrate with adhesive bonding to the tile or roll flooring and the substrate. **DO NOT** proceed with the installation if the concrete subfloor has darkened, if visual moisture is present or if adhesive is still wet. These are clear indications of subfloor moisture problems. Close the area to traffic during flooring installation. Install tiles, roll flooring and accessories after other finishing operations, including painting are complete. If the back of the tile or roll flooring becomes soiled prior to installation, clean with a soft cloth dampened with a mild soap and water solution, rinse and allow to thoroughly dry. Tile or roll flooring 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 adverse affects on the adhesive bond.

### 2. Subfloor/Substrate Inspection and Preparation

#### 2.1 General

Inspect all subfloors/substrates 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. 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. Use care 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

Determine the moisture vapor emission of all concrete substrates on all **Grade Levels** at least one week prior to installation. ASTM F 1869 Calcium Chloride method or ASTM F 2170 Relative Humidity method are acceptable standards. **Caution:** ASTM F 1869 or ASTM F 2170 tests cannot predict long-term moisture conditions of concrete slabs; this testing only indicates moisture conditions at the time of the tests. 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 Flexco FlexTuft 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. DO NOT** install flooring if the substrate does not meet the above noted requirements. **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. Perform a pH test for excessive alkalinity using a pH pencil or litmus paper and de-ionized 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 drying. Re-rinse with clear water, allow drying 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, and will not 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, 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. Perform corrective measures such as bead blasting (shot blasting) or scarifying 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 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. Use Expansion joint covers designed for use with resilient flooring. Use 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 to fill and smooth any non-moving surface cracks, depressions, and other irregularities. Some underlayments may fail under excessive weight; an epoxy caulking compound may be required for certain repairs. Mechanically cleaning the substrate by shot blasting, scarifying, or sanding shall be performed to achieve a flat, smooth, clean surface to prevent irregularities, roughness, or other defects from telegraphing through the new resilient flooring. The surface of the concrete shall be flat to within the equivalent of 3/16" in 10 feet, as described in ACI 117R. Clean the surface 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 A157.1, Recommended Practice for Concrete Floor and Slab Construction) for the preparation of concrete to receive resilient flooring. Refer to 2.1.

## 2.3 Wood Subfloors

Wood subfloors used as subfloors/substrates are to follow the procedures recommended for concrete in 2.1 and 2.2. 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 no 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 subfloors 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, luan, 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 subfloors 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 use are the responsibility of the manufacturer and/or contractor. **DO NOT** use plastic or resin filler to patch cracks. **DO NOT** use cement or rosin coated nails or staples or solvent-based construction adhesive to adhere the plywood. Installation on a sleeper, a wood subfloor system constructed over the top of concrete, is not recommended. Installation directly over Sturd-I-Floor panels is not recommended. All wood subfloors, 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 2.1.

## 2.4 Cementitious Terrazzo and Ceramic Floors

Cementitious 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 manufacturer's recommended 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. **DO NOT** install over epoxy based terrazzo. Cementitious terrazzo must first be sanded to remove all finishes, and then cleaned. Conduct a bond test with adhesive to ensure a successful bond can be achieved before installing. Flexco Floors 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, paint, primer, sealer, rust, and oxidation and properly sanded/grinded to provide a smooth, level, clean substrate to receive flooring. Install the flooring within 12 hours after sanding/grinding to prevent the metal from re-oxidizing. The metal subfloor shall be structurally sound. Deflection of the metal can cause a bond failure between the adhesive and the metal substrate. It is the contractor's responsibility to decide the feasibility of the application. Flexco will not be held liable for failures caused by flexing or deterioration of metal substrates. 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 flooring material will not prevent deterioration of metal substrates from occurring.

## 3. Adhesive Information

### 3.1 Flexco FlexTuft Adhesive

Flexco FlexTuft Adhesive is a single-component, waterproof, synthetic rubber based adhesive used for indoor and outdoor installations over porous and non-porous substrates, excluding areas subjected to lateral shear stress or rolling loads. Rain or exposure to moisture within 72 hours after installation may slow the set up time, and may adversely affect the adhesive. Spread coverage using a 1/8" x 1/8" x 1/8" square notch trowel is approximately 75 square feet on a smooth, porous 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 excess adhesive and clean tools with warm soapy water. Flexco FlexTuft Adhesive is freeze/thaw stable to 0° F; however, it is recommended to protect all adhesive products from freezing. If frozen, **DO NOT** stir until material has completely thawed.

Flexco FlexTuft Adhesive VOC's according to California Rule #1168: 17 grams per liter of coating.

### 3.2 Flexco 77 Solvent Free Epoxy Adhesive

Flexco 77 Solvent Free Epoxy Flooring Adhesive is a solvent free, non-flammable; high performance epoxy adhesive used for indoor FlexTuft installations over porous and non-porous substrates, and used when installing FlexTuft in areas exposed to lateral shear stresses or rolling loads. Rain or exposure to moisture within 72 hours after installation may slow the set up time, and may adversely affect the adhesive. 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” square notch trowel is approximately 100 square feet on a smooth, porous substrate. Coverage will vary according to the type of surface, surface texture, spreading angle, and adhesive temperature. Adhesive is available in 1-quart and 1-gallon plastic pails. Shelf life is one year at 70° F (21° C) in an unopened container. Although the epoxy components are non-freezing, allow the adhesive to stabilize to ambient temperature before mixing. Remove any adhesive on the surface of the tiles, roll flooring or surrounding area 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 not occur if the epoxy is not properly mixed. Label information is in English and Spanish. Read all of the product and safety information concerning the adhesive and any other chemicals or cleaning agents prior to installation.

Flexco 77 Solvent Free Epoxy Flooring Adhesive 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.

## 4. Adhesive Application and Product Installation

### 4.1 Flexco FlexTuft Adhesive Application

Ensure adequate ventilation. Pour the contents of the container onto the substrate and spread evenly using a 1/8” x 1/8” x 1/8” square notch trowel, being careful to leave no puddles of adhesive. Before laying the FlexTuft tiles or rolls, allow the adhesive to “flash off” and “tack up” approximately 15 – 20 minutes. **Caution:** “Tack up” time, open time, and curing characteristics will vary upon the type of substrate, substrate temperature, ambient temperature, humidity, and proper conditioning of the adhesive. **DO NOT** spread more adhesive than can be covered before the adhesive cures.

### 4.2 Flexco 77 Solvent Free Epoxy Adhesive

Ensure adequate ventilation. **DO NOT** mix partial units of adhesive, because the ratio of Part A to Part B is not 1:1. Flexco 77 Solvent Free Epoxy Flooring Adhesive is in two separate containers marked Part A (epoxy resin) and Part B (polyamide resin, hardener). Remove the lids and add all of Part A to 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 must be no streaking. **Caution:** Higher mixing speeds and/or longer mixing time will reduce and can cause premature curing of the adhesive; however, if not mixed long enough, the adhesive will not properly cure. **DO NOT** let the mixed epoxy adhesive stand in the container. Immediately after mixing, pour the contents onto the substrate and spread the adhesive evenly using a 1/16” x 1/16” x 1/16” square notch trowel, being careful to leave no puddles of adhesive. With a shot-blasted substrate or a rough texture underlayment, the adhesive spread rate will be lower. Spreading large areas in excess of 150 square feet could possibly allow the adhesive to cure or setup before the tile or roll flooring is installed which would result in a bond failure. On porous substrates, allow the adhesive to “tack up” for approximately 15 minutes at 75° F at 50% humidity. 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, substrate temperature, ambient temperature, humidity, and proper conditioning of the adhesive. Observe the adhesive to ensure the adhesive has not surpassed its open time and has not begun to cure.

### 4.3 Product Installation

Install FlexTuft in a quarter-turn parquet pattern. Place the FlexTuft into the “tacky” adhesive, pressing from the center of the FlexTuft outwards to exude entrapped air and to embed the tile or roll flooring into the adhesive. Leave

approximately 1/16" gap between the individual tiles. **DO NOT** fit the FlexTuft tightly together. Since these are rubber tiles, the FlexTuft spread out slightly when properly rolled or exposed to direct sunlight. When laying the FlexTuft, use a kneeling board, or for best results, work off the flooring whenever possible. 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 too "wet", allow additional time for the adhesive to "tack up", being careful not to allow the adhesive to cure. **IMMEDIATELY** remove excessive uncured adhesive with a cloth dampened with warm soapy water or denatured alcohol before the adhesive cures. **DO NOT** allow the adhesive to cure on the surface of the FlexTuft. Adhesive allowed to cure on the surface is extremely difficult to remove and can discolor the flooring. Periodically inspect the flooring to ensure there has been no shifting of the FlexTuft to produce excessive gaps between the FlexTuft and / or buckling of the FlexTuft. Periodically lift the FlexTuft to ensure proper adhesive transfer, which should be at least 90% coverage. Cut borders and other specialty cut FlexTuft to fit snugly, not tightly, against the wall, threshold, transition strip, fixtures, or other obstacles. Forcing incorrectly sized tiles or roll flooring into smaller areas will cause buckling of the FlexTuft. **DO NOT** wait until all the installation of the main aisle flooring to begin laying the borders. Lay the border tiles within the adhesive open time. Within 30 minutes of installation, Roll and cross-roll each section of FlexTuft with a 100-pound 3-section roller. Adjust rolling time for other than normal climatic conditions. Use a hand roller in areas where large roller cannot reach. Conduct a visual inspection during the rolling process to ensure there has been no shifting of the FlexTuft and that there is no adhesive on the surface of the tile or roll flooring. **DO NOT** wait until completion of the entire installation 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 24 hours and no wheeled conveyances for at least 48 hours. Protect flooring against mars, marks, indentations and other damage.