Installation Instructions for for Fitflex™

1. INTRODUCTION

1.1 Fitflex™ Sheet Vinyl Floor Coverings are multipurpose floor covering products that meet the requirements of ASTM F 1303, *Standard Specification for Sheet Vinyl Floor Covering With Backing*. These products are recommended for indoor use only.
1.2 For installation under portable bleachers or in an area that will experience heavy static loads (over 200 psi), contact Greatmats for special instructions.
1.3 Fitflex™ shall be installed by experienced professional installers with a minimum of five years experience installing commercial resilient floor covering products, including proper heat weld seaming techniques.
1.4 Substrate testing and preparation shall follow industry standards (quoted herein in italics) and the following installation guidelines.
1.5 For situations that are not covered in this document, contact Greatmats directly.

2. MATERIAL HANDLING AND STORAGE

2.1 Immediately remove floor covering from pallet upon receipt. If packaging is damaged, mark shipping documents as such before signing for the shipment. Contact shipper and/or Greatmats to report damage.

2.1.1 Rolls may be shipped flat in a pyramid stack up to four rolls high. Immediately remove rolls from pallet. Store rolls upright. Do not lay flat.

2.1.2 At least 24 hours before installation, unwrap the rolls, keep them upright and unroll slightly to allow material to relax.

2.1.3 If material is flattened, distorted or otherwise damaged during storage or transportation, do not install.

2.2 Protect all materials including, but not limited, to underlayment panels, patching/leveling compounds, floor covering, welding rods, chemical welding liquid, adhesive and maintenance products from extremes of temperature during shipping. Some products must not be allowed to freeze. Store all products in original packaging in areas on the job site where they are to be installed. Areas shall be enclosed and weather tight, at 65°F - 80°F for a minimum of 48 hours prior to commencement of installation.
2.3 Inspection of materials: Great care is taken to properly label and inspect materials for defects at all phases of manufacturing and handling by Greatmats. However, in the rare case where the wrong product or material with visible defects is shipped, these products shall not be installed. Careful inspection of the product before installing is the responsibility of the installer. Installation of the product denotes acceptance of the product. Greatmats. will not honor any warranty complaints for materials installed in the wrong color, with visible defects or other damage.

3. SUBSTRATE PREPARATION AND TESTING

3.1 All substrates must be sound, clean, permanently dry, smooth, and free of cracks and contaminants including paint, old adhesive, curing compounds, oil, grease, wax, asphalt, or other contaminants that could affect the adhesive bond. Any irregularities in the substrate will telegraph (show through) to the finished floor.
3.2 Concrete Substrates:

3.2.1 Follow guidelines of ASTM F710 *Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring*.* ASTM F710 includes requirements for moisture testing, smoothness, flatness, concrete strength, and the presence of a vapor retarder beneath the slab.

3.2.2 *The installation of a permanent, effective moisture vapor retarder with a minimum thickness of 0.010 in. and a permeance of 0.1 y, as described in Specification ASTM E 1745 is required under all on or below grade concrete floors. The use of such a moisture vapor retarder, provided its integrity has not been compromised, reduces potential severity of water vapor penetration. Every concrete floor slab on- or below-grade to receive resilient flooring shall have a water vapor retarder (often improperly called a vapor barrier) installed directly below the slab.**

3.2.3 *Joints such as expansion joints, isolation joints, or other moving joints in concrete slabs shall not be filled with patching compound or covered with resilient flooring**

3.2.4 *All concrete slabs shall be tested for moisture, regardless of age or grade level.** The only acceptable test methods are the Calcium Chloride test (ASTM F 1869) and Relative Humidity test (ASTM F 2170).

Moisture meters, plastic sheet test or other methods are not acceptable for determining the suitability of concrete slabs to receive resilient floor coverings. It is recommended that testing be conducted by a qualified independent testing agency with experience conducting ASTM F 1869 and F 2170 testing. Test procedures shall be followed exactly in order for test results to be valid. Building shall be at in-service temperature and humidity (minimum 55°F and relative humidity of 35% - 65%), concrete shall be properly cleaned, and the recommended number of tests shall be conducted. See ASTM standards for details.

3.2.5 Test methodology and test results shall be documented and provided to the flooring contractor, general contractor, owner and/or architect.

3.2.6 If concrete moisture conditions are outside the adhesive manufacturer's limits per section 5, do not commence installation. Allow the concrete to fully dry or apply a 100% solids epoxy Moisture Mitigation System. Although Greatmats does not endorse or prefer any manufacturer in particular, we provide the following list of leading Moisture Mitigation System manufacturers for information purposes.

Ardex: 724.203.5000 (www.ardex.com)
Bostik: 978.777.0100 (www.bostik-us.com)
Koster: 757.425.1206 (www.koesterusa.com)
Mapei: 800.426.2734 (www.mapei.us)

3.3 Wood Substrates:

3.3.1 For wood subfloor systems, ensure the subfloor conforms to the guidelines of ASTM F 1482, *Guide to Wood Underlayment Products Available for Use Under Resilient Flooring*. A typical wood subfloor system includes a joist spacing of 16" on center with a double layer subfloor/underlayment system - minimum one inch thickness.

3.3.2 Wood subfloor systems shall be suspended at least 18" above the ground. Crawl spaces shall have adequate cross ventilation and a moisture barrier shall be used on the ground to reduce humidity from ground moisture.

3.3.2 Do not install Greatmats products over lauan panels, plywood with knots, OSB, hardwood flooring, treated wood (i.e. CCA, fire-rated plywood, or other coated wood), particle board, chipboard, flakeboard, fiberboard, Masonite™, pressboard, or other hardboard underlayment, or other uneven or unstable substrates. To cover unsuitable substrates in a wood subfloor system, use underlayment grade plywood (i.e. arctic birch panels or A/C plywood).

3.3.3 Consult ASTM F 1482 or underlayment manufacturer for recommendations regarding plywood thickness, fastener selection and spacing and conditioning of panels.

3.4 Gypsum Substrates:

3.4.1 Do not install over trowel applied gypsum patching compounds.

3.4.2 Do not use poured gypsum underlayment over concrete slabs on or below grade

3.4.3 Compressive strength: Gypsum underlayment, *for commercial installations, shall provide a minimum of 3000 psi compressive strength after 28 days.** If the finished floor will be in a commercial use, this standard must be followed. Underlayment shall be mixed according to manufacturer's guidelines.

3.4.4 Drying Time: Manufacturer's recommended drying time and recommended testing method for dryness shall be followed. Usually a specific moisture meter is recommended by the manufacturer. The calcium chloride test method is not acceptable for testing gypsum underlayment.

3.4.5 Sealer/primer: After drying and prior to installing adhered floor coverings, Gypsum underlayment shall be sealed/primed per the underlayment manufacturer's instructions for covering the underlayment with adhered floor coverings. If the underlayment is not sealed, the surface will be overly porous and the floor covering adhesive will not work correctly.

3.4.6 Patching or "skimcoating" over gypsum substrates: There are a number of patching compounds that can be used over gypsum underlayment. Follow compound manufacturer's instructions for doing so. It may be necessary to prime the gypsum substrate prior to patching.

3.5 Do not install over existing resilient floor coverings.

3.5.1 Concrete Subfloors: Existing resilient floor coverings and adhesives over concrete shall be removed and the concrete shall be repaired using a cement based patching or leveling compound per manufacturer's guidelines. All adhesive residue must be removed prior to installing. Also remove any floor patch below the adhesive layer. DO NOT USE CHEMICAL ADHESIVE REMOVERS. Black asphaltic adhesive can me scraped to a thin, well-bonded residue and encapsulated with an approved patching or leveling compound per manufacturer's instructions. All other adhesives (carpet adhesive, VCT adhesive, epoxy, etc) shall be completely removed from concrete substrates.

3.5.2 Wood Subfloors: Existing resilient floor coverings and/or adhesive residue over a wood subfloor system shall be covered with a plywood underlayment per section 3.3.
3.5.3 NOTE: If removal of existing resilient flooring or adhesive is required, follow "Recommended Work Practices for Removal of Resilient Floor Coverings" available from the Resilient Floor Covering Institute at 706-882-3833 or www.rfci.com. Also, be aware that existing floors and/or adhesives may contain asbestos or lead. Various federal, state and local government agencies regulate the removal of lead or asbestos containing material. Review and comply with all applicable regulations.

3.6 Other substrates such as terrazzo, stone, ceramic tile, and metal shall be covered with cement based underlayment compound per the manufacturer's instructions and ensure compliance with ASTM F 710 for use of these compounds.
3.7 Do not install over non-compatible substrates such as asphalt, any bituminous or asphalt-saturated material, or floor coverings made of (or containing) rubber.
3.8 Radiant Heat: *Most resilient flooring can be installed on radiant heated slabs providing the maximum temperature of the surface of the slab does not exceed 85°F (29°C) under any condition of use.** To allow proper adhesion of the adhesive to the subfloor, the radiant heating system should be lowered, or turned off for at least 48 hours prior to installation of the flooring material. The room temperature must be maintained at a minimum of 65°F prior to, during and after installation for 72 hours after which the temperature of the radiant heating system can be increased. When raising the floor temperature, do so gradually so that the substrate and the flooring material can adapt to the temperature change together. A rapid change could result in bonding problems.

4. SITE CONDITIONS

4.1 Install new floor coverings after all other trades have completed their work.
4.2 Protect areas where floor covering shall be installed from all traffic before, during and after installation.
4.3 Extremes of temperature and humidity can affect floor covering products and can alter the proper cure of patching compounds and adhesives. Building shall be between 65°F and 80°F for 48 hours before installation, during installation and for 48 hours after installation. Thereafter maintain minimum 55°F. Maintain relative humidity of 35% - 65%.
NOTE: If a system other than a permanent HVAC system is utilized, it must provide constant temperature and humidity control at specified levels for the specified time frame.
4.4 Maximize fresh air ventilation by using exhaust fans at point of use. Face fans out of the area where flooring is being installed, not into the area. Never force dry adhesives or patching compounds by using fans.

5. ADHESIVES AND ACCESSORIES

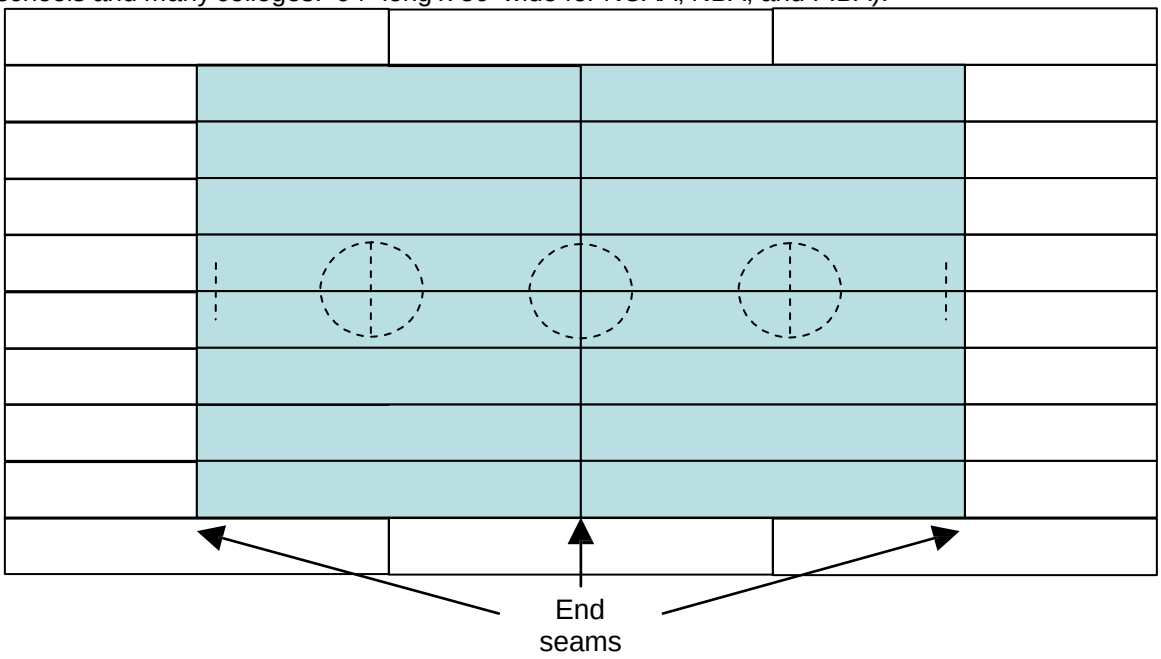
5.1 Fitflex™ is adhered using Perma-Bond with 1/16" x 1/16" x 1/16" square notch trowel. No substitutions. Coverage is approximately160-180 square feet per gallon.
5.2 Concrete test requirements for installations using Perma-Bond Adhesive: ASTM F
1869: maximum MVER of 6 lbs/1000 sq ft/24 hrs
ASTM F 2170: internal relative humidity of 82% or less
5.3 Heat welding thread – see section 6.11.
5.4 Game line paint for sport court floors: Always use aliphatic polyurethane paint for game line painting, such as Endura game line paint (Contact U.S. distributor Can-Am Coatings at 619.937.0430 or visit www.endurapaint.com). Follow manufacturer's instructions for use.

6. INSTALLATION

6.1 Thoroughly sweep the substrate to remove all dirt and debris.
6.2 At least 24 hours before installing, unroll floor covering face up, allowing for a small space between rolls for material to relax. Always use correct lifting techniques when handling sheet vinyl.
6.3 Prior to laying out the material, measure and mark control lines on the floor in pencil.
6.4 After material has relaxed (see section 2.1.2), cut sheets with approximately four inches excess (2" at each end).
6.5 Layout: The installation layout shall be designed with the goal of keeping seam visibility to a minimum. Position seams so that main traffic runs parallel to (not across) the seam, light does not strike directly across the seam and seams are away from areas subject to pivoting or rolling traffic. In doorway openings connecting adjoining rooms, parallel seams are required. Avoid cross seams when possible.

6.5.1 For sport court installations, place the seams only at the center and end court lines so that the game lines effectively cover the center seams. See Diagram 1 below.

6.5.2 Diagram 1: Layout of Fitflex™ for a basketball court (84' long x 50' wide for elementary and high schools and many colleges. 94" long x 50' wide for NCAA, NBA, and FIBA).



6.6 Seam Cutting: The edges shall be trimmed using a straight edge and a sharp knife or an edge trimmer designed to trim the factory edge of sheet vinyl flooring. Do not use factory edges at seams. Sheets shall be fitted and laid precisely next to each other, without any gaps. Do not pressure fit or allow the seams to peak.

6.7 Once the sheets are in position, fold them back to expose the substrate. When installing more than three rolls, it is recommended to tube the rolls (fold them back lengthwise).

6.8 Spread adhesive and allow approximately 20 minutes open time.

Important Note: appropriate open time depends on several factors such as substrate porosity (longer if the substrate is non-porous); room temperature (longer if room is too hot or cold); relative humidity (longer if higher); temperature of the adhesive (longer if cold); and amount of adhesive applied (longer if more used). Never use fans or apply less adhesive than required in an attempt to speed up installation. Use a finger to test the adhesive to see if it has "legs" and is moist to the touch before installing the floor covering. If there is no adhesive transfer to a finger, do not set material into adhesive; the adhesive has been open for too long. Remove the adhesive and spread new adhesive.

6.9 After providing sufficient open time for the adhesive, lay the first straight-edged sheet into the adhesive and then lay in the next sheet. CAUTION: Do not allow the edge of the sheets to come in contact with the adhesive and do not allow adhesive to bleed up between the seams. This contamination can affect the seam sealing process. Use a hand roller to roll the seam area.

6.10 Using a 100-lb (45kg), three-section floor roller, roll the entire floor at least twice, once in each direction and occasionally lift the sheet to ensure that the adhesive has transferred completely to the backing. Repeat steps for the remaining floor. Once finished, smooth the entire floor again with the roller.

6.11 Seam Sealing: Seams for Fitflex™ products shall be sealed using the heat weld method at least 24 hours after material has been set in adhesive. Fitflex™ welding rod is 4mm in diameter. Be sure the groover/router and welding gun tip are also 4mm, (using too large a tip can burn the material).

6.11.1 Because site conditions vary, practice steps 6.11.2 through 6.11.5 on scrap material before welding actual floor seam. Test the seam strength by tugging at a length of welding rod. Weld rod should break before pulling away from the flooring.

6.11.2 Groove the seams manually or with an automatic grooving machine to receive the welding rod. Groove depth to the thickness of the clear wear layer, and just through the pattern layer in a centered "U" shape. A very thin white line will be visible. Maintain a consistent depth in the groove. Keep the groove area clean and dry.
6.11.3 After grooving, weld the seam using a hot air welding gun. The proper procedure for heat welding sheet resilient floor covering is a combination of the proper temperature of the heat welding gun and the speed of application. Temperature will vary depending on conditions on the job site, and speed shall be adjusted accordingly based on the installer. Do not put the tip on the face of the material, as doing so may burn the material.
6.11.4 After the welded seam has cooled, trim the welding rod in three steps. Use a trim plate with a sharp spatula trim knife for the first pass, to release heat in the weld. Wait for welded seam to cool, approximately 30 minutes. Trim weld rod flush with the spatula knife, taking care not to gouge the vinyl surface. Dampening the surface with soapy water will help the spatula knife glide more smoothly. There are also plane tools designed to make the first and final trim cuts at one time, but should only be used after the weld has cooled.
6.11.5 Optional: if desired, "glaze" the surface of the finished seam. Remove the tip from the heat welding gun and apply hot air to the surface of the weld. This will darken the weld slightly and increase the gloss, which will make the seam less visible and more stain resistant.

7. CLEAN UP AND FINAL FINISH

7.1 Keep off flooring for 24 hours to prevent indentations while the adhesive sets.
Wait 72 hours before initial cleaning or allowing rolling traffic or furniture on the floor. Initial cleaning shall follow the latest version of the maintenance instructions www.greatmats.com.
7.2 Maintain the room temperature between 65°F and 80°F for 48 hours after installation. Thereafter, maintain temperature at a minimum of 55°F.
7.3 Check appearance of entire installation. Use a white cloth moistened with water to remove any adhesive on the surface of flooring or walls. A mild solvent such as denatured alcohol may also be used.
7.4 Dust mop or vacuum to remove debris and grit. Do not use a "beater bar" vacuum.
7.5 If construction is to continue after the floor is installed, wait 24 hours, sweep or vacuum the floor, cover with brown Kraft paper and plywood or hardboard panels.
7.6 Do not roll heavy equipment or furniture directly on top of the floor. Cover floor with brown Kraft paper and plywood or hardboard panels.

8. INITIAL MAINTENANCE

8.1 Sealer/Floor Finish: Certain circumstances may require a sealer/floor finish. Please consult Greatmats for details.
8.2 Entrance Matting: Because 90% of all dirt in a building comes in on footwear, Greatmats strongly recommends installing and maintaining entrance matting (preferably permanently installed) at all outdoor entrances (20-30 linear feet for major entrances; less for infrequently used entrances). Doing this will improve indoor air quality, reduce flooring maintenance costs, and lengthen the life of your interior floors.
8.3 Furniture: To minimize the chance of damage, proper glides must be used on chairs and other furniture that may side directly across the floor. Chairs shall have glides that are a minimum of 1 inch in diameter. Heavy objects such as equipment, appliances, fixtures and heavy furniture shall not be moved directly across the floor. Using protective boards will reduce the chance of damage in these cases.
8.4 Sunlight: Direct sunlight can damage most interior finishes so proper protection in the form of window coverings is recommended.
8.5 For recurring maintenance, download Fitflex™ maintenance instructions at www.greatmats.com.

*ASTM F 710 *Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring*, ASTM International, West Conshohocken, PA, 2003, www.astm.org.

Greatmats.com
117 Industrial Ave
Milltown, WI 54858
877-822-6622
info@greatmats.com