

This document is intended to cover substrate preparation requirements and installation instructions for all Luxury Vinyl Flooring concepts for Flexco. If there are any questions or concerns, please reach out to solutions@rhctechical.com.

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Recommended Adhesive Coverage Rates, Moisture and Traffic Limits after Installation*							
Adhesive	Porous	Non-Porous	RH% Limit	MVER Limit	Light	Heavy	Maintenance
SP-500	150 sq. ft. / unit		90%	8 lbs.	Immediate	24 Hours	48 Hours
AP-520, R	400 sq. ft.		90%	6 lbs.	Immediate	Immediate	72 Hours
AP-520, T	225 sq. ft.		90%	6 lbs.	24 Hours	48 Hours	72 Hours
AW-510	160 sq. ft.	225 sq. ft.	90%	6 lbs.	24 Hours	48 Hours	72 Hours
MS-700	160 sq. ft.	235 sq. ft.	95%	10 lbs.	8 Hours	24 Hours	48 Hours
U-705	160 sq. ft.	235 sq. ft.	100%	12 lbs.	8 Hours	24 Hours	48 Hours
*coverages are per gallon unless noted otherwise							
*rates are approximate and subject to level of porosity as well as ambient conditions, actual values may vary							
R = Roller Application, T= Trowel Application							

1. PRE-INSTALLATION

Prior to acceptance of this document refer to website www.flexcofloors.com to confirm that you have the most current revision. Consult all associated product literature concerning adhesive installation, maintenance and warranty prior to installation of flooring. Allow all trades to complete work prior to installation when possible. Deliver all materials to the installation location in its original packaging with labels intact. Do not stack pallets to avoid damage. Remove any plastic and strapping from packaging after delivery. Inspect all material for proper type, color and matching lot numbers if appropriate. Ensure that all adhesives intended for installation are approved for use with accessory material. Turn off radiant-heated flooring systems 48 hours prior to installation. 48 hours after installation, gradually increase the temperature over the course of 24 hours to a maximum temperature of 85°F (29.5° C). Do not proceed with installation until all conditions have been met.

1.1 STORAGE, ACCLIMATION & SERVICE ENVIRONMENT

Ensure material is adequately stored at temperatures between 65° F (19° C) and 85° F (30° C) prior to installation. This product is designed, manufactured and tested to perform at constant temperatures, not fluctuating more than 4° from normal selected service temperatures from the allowable 65° F (19° C) - 85° F (30° C) range.

During acclimation, the site must be fully enclosed, weather tight, and material must be in the installation area with the HVAC system functional and operating at desired service temperatures for a period of 48 hours prior to installation, during the installation and for the service life of the installation afterwards.

It is recommended to maintain an ambient relative humidity between 40% and 60% for a period of 48 hours prior to installation, during the installation and for the service life of the installation afterwards. If the material will be installed outside of the above acclimation and service temperature ranges contact Technical Services for more detailed installation recommendations. Do not proceed with installation until all conditions have been met.

1.2 PRODUCT LIMITATIONS

Select appropriate adhesives, such as wet-set acrylics or urethanes, for areas that will have excessive windows and/or sunlight exposure from walls or ceilings such as sunrooms, window walls, skylights, etc. Pressure sensitive adhesives are soft setting adhesives and do not prevent effects or issues that direct sunlight creates in vinyl products due to thermodynamics.

Do not install flooring material directly over rubber, hardwood, LVT, linoleum, cushioned vinyl, cork, and/or asphaltic materials. Do not install flooring material in outdoor areas and in or around commercial kitchens or areas that may be exposed to animal or vegetable fats and oils, grease and petroleum-based hydrocarbons. Do not install in areas that may be subjected to sharp, pointed objects. Do not allow product to be directly exposed to direct sunlight or extreme heat sources, such as radiators, ovens or other high-heat equipment. Long term, extended or excessive exposure to Sunlight & UV Heat can cause discoloration or other undesirable effects, so use caution and/or window treatments in these areas. Dragging or sliding objects across the flooring may cause damage to the flooring. May be susceptible to staining from rubber tires, casters or rubber-backed walk-off mats, as well as harsh disinfectants, cleaning agents, dyes or other harsh chemicals – ensure all chemicals and materials that may come in contact with flooring surface will not stain, mar or otherwise damage the flooring material prior to use.

2. SUBSTRATE PREPARATION

In regards to substrate preparation when mechanical sanding, grinding, shot blasting and vacuuming always follow the Resilient Floor Covering Institute's (RFCI) "Recommended Work Practice for Removal of Existing Floor Covering and Adhesives", and all applicable local, state, federal and OSHA requirements in regards to Asbestos and Silica containment regulations.

All substrates must be prepared according to the following information or ASTM F710 or ASTM F1482 at a minimum, as well as applicable ACI and RFCI guidelines. Substrates must be clean, smooth, permanently dry, flat, and structurally sound. Substrates must be free of visible water or moisture, dust, sealers, paint, sweeping compounds, curing compounds, residual adhesives and adhesive removers, concrete hardeners or densifiers, solvents, wax, oil, grease, asphalt, visible alkaline salts or excessive efflorescence, mold, mildew and any other extraneous coating, film, material or foreign matter.

It is recommended that all substrates have a floor flatness of FF32 and/or a flatness tolerance of 1/8" in 6' or 3/16" in 10'. Substrates that do not meet this requirement should have a compatible cementitious patch (such as the Excelsior CP-300) or self-leveling underlayment (such as the Excelsior SU-310) installed to flatten the installation area.

All substrates must have any and all existing adhesives, materials, contaminants or bond-breakers mechanically removed via scraping, sanding, grinding or buffing with a 25 grit DiamaBrush Prep Plus tool prior to adhesive installation. In extreme situations, shot-blasting may be required. Mechanical preparation must expose at least 90% of the original substrate. Following cleaning and removal, all substrates must be vacuumed with a HEPA approved

vacuum and flat vacuum attachment to remove all surface dust. Sweeping without vacuuming will not be acceptable. **Do not use solvent/citrus based adhesive removers prior to installation.**

2.1 CONCRETE SUBSTRATES

All concrete must have a minimum compressive strength of 3500 PSI and be prepared in accordance with information below. When flooring is being installed directly over concrete, concrete surfaces that have an ICRI Concrete Surface Profile (CSP) over 4 should be smoothed with a self-leveling underlayment or a patch to prevent imperfections from telegraphing through flooring materials.

All substrates must be tested per ASTM F3191 to confirm porosity. Use a pipette or equivalent to conduct three tests by placing a .05 mL (1/4" wide) droplet of clean, potable water onto the surface. If the substrate absorbs water within 60 seconds, the substrate is considered porous. Conduct 3 tests for the first 2000 sq. ft. and one for each additional 3000 sq. ft., at least one per room. All other substrates that do not meet this requirement are considered non-porous. Ensure that all non-porous substrates are not contaminated with any aforementioned contaminants.

In addition to ASTM F2170 Relative Humidity Testing, existing concrete that has previously had floor covering installed on all grade levels must be tested in accordance with ASTM F1869, using Calcium Chloride test kits, to quantitatively determine the Moisture Vapor Emissions Rate (MVER) of the concrete.

If ASTM F2170 or ASTM F1869 test results exceed the prescribed limits, a moisture mitigation product, such as Excelsior MM-100 Moisture Mitigation, must be installed prior to proceeding with installation.

2.2 CHEMICALLY ABATED SUBSTRATES

In situations where existing flooring adhesive was removed chemically, the following conditions now exist. Since there are known concerns with the chemical abatement process, including the following; (1) once the chemical is present in the substrate it cannot recognize the difference between the old adhesive and the new adhesive, (2) it is considered a penetrant and there is no way to know how deep into the substrate it could have penetrated into the substrate due to porosity, (3) there is no way to tell (in a short term test) if the substrate has been neutralized or rinsed (abatement chemical removed) well enough to accept new adhesive. The two most common mechanical abatement methods are shot blasting or hydro blasting. We also recommend all abatement be performed by a licensed and trained professional, familiar with local, state and federal laws.

However, if a chemical abatement has already been performed, we recommend the Mapei process to prepare the substrate to receive a finish flooring product. The Mapei process is to scour the substrate using the Planiprep SA according to Mapei instructions, the top with the Planiprep ET according to Mapei instructions. Then treat the substrate as non-porous for the selection of installation methods.

2.3 RESINOUS SUBSTRATES

When installing directly over a resinous products, such as the Excelsior MM-100 or an epoxy coating, ensure that coating is dry to the touch and has cured for the prescribed length of time. Substrate must be clean, dry, sound and free of contaminants. Resinous substrates are considered **non-porous** so ensure selected adhesives can be used over non-porous substrates and follow all installation instructions and flash times for non-porous substrates.

2.4 GYPSUM BASED SUBSTRATES

Gypsum-based substrates must have a minimum compressive strength of 3500 PSI. Gypsum substrates that do not meet this requirement may have one coat of the Excelsior MM-100 installed to improve the top layer bonding strength of the substrate. Substrate must be structurally sound and firmly bonded to the subfloor below. Any cracked or fractured areas must be removed and repaired with a compatible patch or repair product. Follow instructions for installation over a gypsum substrate. New or existing gypsum substrates may require the substrate has a primer or sealer applied just prior to finished floor being installed. Follow all manufacturers' recommendations regarding preparation for resilient flooring installation.

2.5 WOOD SUBSTRATES

Wood substrates must be prepared in accordance with ASTM F1482. Prior to installation, moisture retardant sheathing with a maximum rating of 1.0 perm must be installed beneath the wood subfloor, overlapped at least 8".

Wood subfloor materials, such as OSB, lauan, particleboard, chipboard or cementitious tile backer boards, are not acceptable subfloors for resilient flooring. Avoid preservative treated and fire-retardant plywood, as some may be manufactured with resins or adhesives that may cause discoloration or staining of the flooring.

Plywood sheathing or underlayments designed for long lasting exposure to exterior climates contain resins/waxes that could stain or be considered bond breakers. Always refer to the manufacturers recommendations of these products. Most will recommend a minimum of 1/4" plywood underlayment per flooring manufacturer recommendations be installed prior to adhering resilient flooring. If they do not mention specific recommendations, we require the installation of a minimum of 1/4" plywood underlayment installed prior to installing resilient flooring.

If the subfloor materials mentioned above are already installed or the wood substrate is old and not repairable, the use of multi-ply Underlayment Grade plywood at a minimum of 1/4" thick with a fully sanded face will be required.

Wood subfloor deflection, movement, or instability will cause the flooring installations to release, buckle or become distorted. As such, do not use plastic or resin filler to patch cracks. Do not use cement or rosin coated nails and staples or solvent-based construction adhesives to adhere the plywood. Only install over a properly constructed sleeper system (wood subfloor system over concrete, consult the technical department for further details) and do not install directly over Sturd-I-Floor panels.

2.6 METAL SUBSTRATES

Metal substrates must be thoroughly sanded/ground and cleaned of any residue, oil, rust and/or oxidation. Substrate must be smooth, flat and sound prior to installation. When installing in areas that may be subject to topical water or moisture and/or high humidity, an anti-corrosive coating must be applied to protect metal substrate. Contact a local paint or coating supplier for coating recommendations. Install flooring within 12 hours after sanding/grinding to prevent re-oxidation. Any deflection in the metal floor can cause a bond failure between the adhesive and the metal substrate. Be sure to follow installation procedures and trowel sizes for non-porous substrates. Installing over Checker plate or Diamond plate is not recommended.

2.7 EXISTING FLOORING SUBSTRATES

Existing rubber, hardwood, LVT, linoleum, cushioned vinyl, cork, and/or asphaltic materials as well as the adhesives used to install them, must be completely removed from the substrate prior to installation.

Existing VCT, VAT, quartz tile, solid vinyl tile, non-cushioned sheet goods, and/or asphaltic materials and existing adhesives or adhesive residue must have a compatible cementitious patch or underlayment installed over the substrate prior to installation.

Existing hardwood flooring requires suitable underlayment grade plywood be installed over the substrate.

New flooring may be installed over existing stone flooring substrates, such as terrazzo, porcelain or ceramic tile. Ensure existing flooring is a single layer of material and that all materials are clean, dry, sound, solid, well adhered and free of site-applied finishes, waxes and/or contaminants. Any and all loose tiles must be removed and repaired or replaced. All grout lines and irregularities must be filled and troweled flush with a suitable primer and patch such as the Excelsior NP-230 and CP-300 to prevent telegraphing of the existing floor. All existing flooring substrates that are outside of flatness tolerances that cannot be repaired with the Excelsior CP-300 patch should be leveled with the SU-310 self-leveling underlayment to achieve a smooth, flat substrate.

All existing flooring substrates must have any and all site-applied finishes and/or waxes completely removed prior to flooring installation in order to ensure a proper adhesive bond. For mechanical removal, use a low-speed buffer and 40-60 grit sandpaper. Properly prepared substrates should not have any remaining gloss or sheen. For chemical removal, ensure chemical treatments will not disrupt adhesion of the existing flooring to the substrate. Be

sure to rinse the existing flooring adequately with clean, potable water to remove any and all chemicals from the surface of material.

Do not install flooring until any moisture on, between or below existing flooring has completely dried. Ensure all dust; dirt and debris are removed prior to flooring installation.

2.8 RADIANT HEATING SUBSTRATES

When installing flooring over a substrate that contains a radiant heating system, ensure the radiant heat is turned off 48 hours prior to installation and remains off during the entire installation. The radiant heat may be turned on 48 hours after installation and the normal operating temperature should be increased gradually over the course of 24 hours. Ensure the temperature of the radiant heating system does not exceed 85° F (29.5° C) and avoid making abrupt changes in radiant heating temperature.

2.9 LOOSE LAY MOISTURE OR SOUND CONTROL PRODUCTS

When installing over Loose Lay moisture or sound control products, please contact Technical Services with the product information you are installing over for further directions.

2.10 CRACKS, JOINTS & VOIDS

All cracks, joints and voids, as well as the areas surrounding them, must be clean and free of dust, dirt, debris and contaminants. All minor cracks and voids 3/64" or less may be repaired with a suitable cementitious patch. Due to the dynamic nature of concrete slabs, manufacturer cannot warranty installations to cover expansion joints, cracks or other voids such as control cuts, saw joints, moving cracks, and/or voids. Do not install flooring directly over any expansion joints as all expansion joints should be honored and have a suitable expansion joint covering system installed to allow expansion joint to move as it was designed. In areas where random cracks are 3/64" or greater it is hard to tell if the slab will continue to move or has finished moving. Consult a structural engineer if there are any questions or concerns with a crack or joint, especially those that may affect structural integrity such as expansion joints or excessive random cracking in areas that are not designed to move.

3. INSTALLATION

3.1 GLUE DOWN INSTALLATION

If using a sound deadening underlayment it should be no thicker than 2.5mm.

Ensure substrate is suitably prepared prior to installation, as manufacturer is not responsible for substrates that have not been properly prepared and tested for moisture. Ensure adhesive is approved for use with flooring material and the proper trowel type and size is used, as manufacturer is not responsible for any and all adhesion issues related to improper adhesive selection or usage. Select appropriate adhesives, such as wet-set acrylics or urethanes, for areas that will have excessive window/sunlight exposure from walls or ceilings such as sunrooms, window walls, skylights, etc. In these type areas a wet-set adhesive that sets hard should be used such as AW-510, MS-700 or U-705.

Prior to installation, confirm material installation pattern and direction per design specifications or work order. Inspect all tiles before installing or during installation to verify that there are no visible defects, damages or excessive shading variations. Blend materials from several cartons to ensure consistent appearance and color or shade variation. Some flooring products, colors and textures have latent and acceptable color and shade variations. If there are concerns regarding shade or color variation, do not install material and consult a sales representative and manufacturer's technical staff.

Ensure substrate is clean, dry, flat, and sound prior to installation. Ensure the room is square using the 3-4-5 squaring rule or similar method to ensure acceptable installation. Determine lay out for the area if not provided by dry laying the material with the area. Cut borders and other specialty pieces to fit snugly against or around walls, thresholds, transition strips, fixtures and other protrusions or accessories. Ensure material around perimeter is 1/8" from wall or less, depending on depth of wall base or trim. Ensure all end seams are a minimum of 6" apart.

Use a nail-down guide or equivalent along starting row to expedite wet-set installation. Apply adhesive according to instructions for specific product in use and observe adhesive flash times, if applicable. Ensure all adhesive working times are observed and followed. Be sure to follow instructions based on substrate porosity (porous or non-porous). Use below chart for reference.

Install material into adhesive and observe directional arrows on back of tile to ensure arrows are installed in the same direction, unless installing in a specific and pre-determined design, such as a herringbone design. For larger installations, use a pyramid layout when installing planks to eliminate run-off.

When installing into adhesive using a wet-set method, avoid walking or working on material until adhesive has cured for light foot traffic. Working on material that is installed into wet adhesive could cause adhesive to displace. When working off of material is not possible, use a kneeling board or equivalent to disperse weight evenly and prevent adhesive displacement. Pay close attention to working time to avoid adhesion issues. This may require installing material in smaller sections. Replace trowels at recommended intervals to maintain proper trowel ridge and spread rate.

Periodically lift material to ensure proper adhesive transfer and ensure adhesive has not surpassed the open time – adhesive should cover 90% of tile. Roll material with a 3 section, 100 lb. roller within 30 minutes of installation, crossing in a perpendicular direction after initial roll. Use a hand roller in areas that cannot be reached with larger roller.

Visually inspect installation to ensure that material has not shifted and that adhesive has not been squeezed out of joints or compressed onto surface. Clean excessive adhesive or adhesive residue from the surface of the material per adhesive recommendations. ***Do not apply abrasive or solvent based cleaners directly to flooring material.***

4. FLOORING PROTECTION AFTER INSTALL

Protect newly installed flooring and accessories with construction grade paper or protective boards, such as Ram Board, ThermoPLY, Masonite or other materials to prevent damage by other trades. Do not slide or drag pallets or heavy equipment across the new accessories. Limit usage and foot traffic according to the adhesive's requirements. When moving appliances or heavy furniture, it is a good idea to protect flooring and accessories from scuffing or tearing using temporary floor protection.