Total Flooring Solutions

COMMERCIAL INSTALLATION GUIDELINES

GENERAL INFORMATION:

- All substrates to receive moisture sensitive floor covering require proper moisture testing.
- Use only Portland based patching and leveling compounds. Do not install resilient floor covering over gypsum-based patching and/or leveling compounds.
- It is recommended that resilient floor covering installation shall not begin until all other trades are completed.
- Material should always be visually inspected prior to installation. Any material installed with visual defects will not be considered a legitimate claim as it pertains to labor cost.
- Perform bind testing to determine compatibility to the substrate. A latex primer can be utilized to promote adhesion.

STORAGE AND HANDLING:

- For sheet vinyl, store all rolls upright; **do not** lay rolls on side (flat) for long periods of time.
- When more than one roll of a color is being installed, all material should be from the same batch (dyelot) and the rolls must be installed in consecutive order (roll sequence). The rolls should be laid out prior to adhering to the substrate.
- Flooring material and adhesive must be acclimated to the installation area a minimum of 48 hours prior to installation.
- Store cartons of tile or plank products flat and squarely on top of one another. Preferably, locate material in the "center" of the installation area (i.e. away from vents, direct sunlight, etc.) Storing cartons in direct sunlight may affect proper acclimation by inducing thermal expansion/contraction.
- When palletizing on a jobsite, vinyl plank or tiles need to be stacked 2 rows high side by side with no airspace between. Then quarter turned for 2 rows side by side, not to exceed 12 boxes high. A 5/8" or thicker plywood must also be placed on the pallet first. Do not stack pallets 2 high unless utilizing a ¾" thick plywood cap between pallets.

SITE CONDITIONS:

- Areas to receive resilient flooring should be adequately illuminated during all phases of the installation process.
- Controlled environments are critical. Fully functional HVAC systems are the best way to ensure temperature and humidity control.
    - **DO NOT** install resilient flooring products until the work area can be temperature controlled.
    - The permanent HVAC system must be operational and functional and set to a minimum of 65°F or a maximum of 85°F prior to, during, and after installation. Once the installation is complete, the temperature should not exceed 85°F.

SUBFLOOR INFORMATION

Note: All substrates to receive resilient flooring shall be dry, clean, smooth, and structurally sound. They shall be free of dust, solvent, paint, wax, oil, grease, residual adhesive, adhesive removers, curing, sealing, hardening/parting compounds, alkaline salts, excessive carbonation/laitance, mold, mildew, and other foreign materials that could prevent the adhesive from bonding.

WOOD SUBFLOORS:

Wood subfloors must be structurally sound and in compliance with local building codes.

- It is recommended that your chosen APA underlayment grade panels be designed for installation under resilient flooring, and carry a written warranty covering replacement of the entire flooring system.
- Double-layered APA rated plywood subfloors should be a minimum ¾" total thickness, with at least 18" well ventilated air space beneath.
- Insulate and protect crawl spaces with a vapor retarder covering the ground.
- Particleboard, chipboard, flakeboard, OSB, hardboard or similar are not recommended subfloor material and require the additional layer of ¼" APA approved underlayment.
- **DO NOT** install over sleeper construction subfloors or wooden subfloors applied directly over concrete.
- Underlayment panels can only correct minor deflection deficiencies in the subfloor while providing a smooth, sound surface on which to adhere the resilient flooring.
- Any failures in the performance of the underlayment panel rest solely with the panel manufacturer and not with TFS, LLC..
- TFS, LLC. resilient flooring is not recommended directly over fire-retardant treated plywood or preservative treated plywood.
- The materials used to treat the plywood may cause problems with adhesive bonding. An additional layer of APA rated ¼" thick underlayment should be installed.
- Always follow the underlayment manufacturer's installation guidelines.

STRIP-PLANK WOOD FLOORING:

- Due to expansion/contraction of individual boards during seasonal changes a ¼" or thicker APA underlayment panels must be installed over these types of subfloors.

CONCRETE SUBFLOORS:

NEW AND EXISITING CONCRETE SUBFLOORS SHOULD MEET THE GUIDELINES OF THE LATEST EDITION OF ACI 302 AND ASTM F 710, "STANDARD PRACTICE FOR PREPARING CONCRETE FLOORS TO RECEIVE RESILIENT FLOORING" AVAILABLE FROM THE AMERICAN SOCIETY FOR TESTING AND MATERIALS, 100 BARR HARBOR RIVE, WEST CONSHOHOCKEN, PA 19428; 610.832.9585; HTTP://WWW.ASTM.ORG

- All concrete substrates should be tested for IRH (Internal Relative Humidity) according to ASTM F 2170.
- Substrates shall be smooth, structurally sound, dry, clean and free of all foreign material such as dust, wax, solvents, paint, grease, oils, old adhesive residue, curing/hardening compounds, sealers and other foreign material that might prevent adhesive bond.
- On or below grade slabs must have an effective vapor barrier under the slab.
- Wet curing 7 days is the preferred method for curing concrete.
- Curing compounds **(DO NOT USE)**. If present, they can interfere with the bond of the adhesive to the concrete. Seek assistance from a substrate manufacturer if curing agents are detected.
- Remove curing compounds 28 days after placement, so concrete can begin drying.
- Concrete floors shall be flat and smooth within 1/8" in 6 feet or 3/16" in 10 feet. F-number System: Overall values of FF 36/FL 20 may be appropriate for resilient floor coverings.

- Expansion and isolation joints in concrete are designed to allow for the expansion and contraction of the concrete. Resilient flooring products should never be installed over expansion joints. Expansion joint covers designed for use with resilient floor coverings should be used. Control joints (saw cuts) may be patched and covered with resilient once the concrete is thoroughly cured, dry, and acclimated.
- ASTM F 2170 IRH (In-situ Relative Humidity) are required for the TFS, LLC. warranty. Three tests must be conducted for the first 1000 SF, and one additional test for each additional 1000 SF.
- Required Moisture Testing - maximum moisture per ASTM F1869 CaCl is 8 lbs, and per ASTM F2170 is 90% per 1000SF.
    - pH readings must not exceed 10.0
    - Reading below 7.0 and in excess of 10.0 can affect resilient flooring and adhesives negatively and will require mitigating.

NOTE: IT MAY NOT BE THE FLOOR COVERING INSTALLER'S RESPONSIBILITY TO CONDUCT THESE TESTS. IT IS, HOWEVER, THE INSTALLER'S RESPONSIBILITY TO MAKE SURE THESE TESTS HAVE BEEN CONDUCTE, AND THT THE RESULTS ARE ACCEPTABLE PRIOR TO INSTALLING THE FLOOR COVERING. WHEN MOISTURE TESTS ARE CONDUCTED, IT INDICATES THE CONDITIONS ONLY AT THE TIME OF THE TEST.

LIGHTWEIGHT CONCRETE:

All recommendations and guarantees as to the suitability and performance of lightweight concrete under resilient flooring are the responsibility of the lightweight concrete manufacturer. The installer of the lightweight concrete product may be required to be authorized or certified by the manufacturer. Correct on-site mixing ratios and properly functioning pumping equipment are critical. Slump testing is recommended.

- Lightweight aggregate concretes having dry densities greater than 90 lbs. per cubic foot may be acceptable under resilient flooring.
- Concrete slabs with heavy static and/or dynamic loads should be designed with higher strengths and densities to support such loads.
- Surface must be permanently dry, clean, smooth, free of all dust, and structurally sound.
- Perform bond testing to determine compatibility of adhesive to the substrate. A primer can be used to promote adhesion.
- Three IRH tests should be conducted for areas up to 1000 SF. One additional IRH for each additional 1000 SF.

RADIANT HEAT:

Radiant heated substrates must not exceed 85°F surface temperature.

- Seven days prior to installing resilient products over newly constructed radiant heated systems, make sure the radiant system has been on and operating at maximum temperature to reduce residual moisture within the concrete.
- 24 hrs. prior to installation lower the temperature to 70°F and maintain that temperature for 48 hrs. after installation. After continuous operation of the radiant system, ensure the temperature of the surface does not exceed 85°F.

- Use of an in-floor temperature sensor is recommended to avoid overheating.

WARNING! DO NOT SAND, DRY SWEEP, DRY SCRAPE, DRILL, SAW, BEADBLAST OR MECHANICALLY CHIP OR PULVERIZE EXISITING RESILIENT FLOORING, BACKING, LINING FELT, ASPHALTIC (CUTBACK) ADHESIVES OR OTHER ADHESIVES.
These products may contain either asbestos fibers and/or crystalline silica. Avoid creating dust, inhalation of such dust is a cancer and respiratory tract hazard. Smoking by individuals exposed to asbestos fibers greatly increases the risk of serious bodily harm. Unless positively certain that the product is a non-asbestos-containing material, you must presume it contains asbestos. Regulations may require that the material be tested to determine asbestos content and may govern the removal and disposal of material. See current edition of the Resilient Floor Covering Institutes (RFCI) publication Recommended Work Practices for Removal of Resilient Floor Coverings for detailed information for instructions on removing all resilient covering structures. For more information go to www.rfci.com

EXISTING FLOORCOVERINGS

RESILIENT FLOOR COVERING:

- Must be single layered, non-cushion backed, fully adhered, and smooth.
- Show no signs of moisture or alkalinity.
- Waxes, polishes, grease, grime, and oil must be removed.
- Cuts, cracks, gouges, dents, and other irregularities in the existing floor covering must be repaired or replaced.
- Embossing leveler recommended to aid in proper bonding and to prevent telegraphing.
- Do not install over rubber-based substrates.

NOTE: THE RESPONSIBILITY OF DETERMINING IF THE EXISITING FLOORING IS SUITABLE TO BE INSTALLED OVER TOP OF WITH RESILIENT, RESTS SOLELY WITH INSTALLER/FLOORING CONTRACTOR ON SITE. IF THERE IS ANY DOUBT AS TO THE SUITABILITY, THE EXISTING FLOORING SHOULD BE REMOVED, OR AN ACCEPTABLE UNDERLAYMENT INSTALLED OVER IT. INSTALLATIONS OVER EXISITING RESILIENT FLOORING MAY BE MORE SUSCEPTIBLE TO INDENTATION.

QUARRY TILE, TERRAZO, CERAMIC TILE, POURED FLORS (EPOXY, POLYMERIC, SEAMLESS):

- Must be totally cured and well bonded to the concrete.
- Must be free of any residual solvents and petroleum derivatives.
- Show no signs of moisture or alkalinity.
- Waxes, polishes, grease, grime, and oil must be removed.
- Cuts, cracks, gouges, dents, and other irregularities in the existing floor covering must be repaired or replaced.
- Fill any low spots, holes, chips, and seams that may telegraph through the new flooring.
- Grind any highly polished or irregular/smooth surfaces.
- Tile grout joints and textured surfaces must be filled with an embossing leveler or substrate manufacturer approved material.

OLD ADHESIVE RESIDUE:

- If the adhesive residue is asphalt-based (cut-back), or any other type of adhesive is present, it must be dealt with in one of two ways:
    1. It may be mechanically removed such as: bead blasting or scarifying.
    2. A self-leveling Portland based underlayment may be applied over it. Check with a substrate manufacturer suitability, application instructions, and warranties.

- Never use solvents or citrus adhesive removers to remove old adhesive residue. Solvent residue left in/on the substrate may affect the new adhesive and floor covering.

WARNING! SKIM COATING OVER OLD ADHESIVE IS NOT RECOMMENDED. THE ADHESIVE MAY BREAK DOWN AND COULD LEAD TO FAILURE. THE OLD ADHESIVE MAY NOT ALLOW THE RESILIENT FLOORING TO RETAIN IT'S DIMENSIONAL STABILITY, POSSIBLY, LEADING TO UNNECESSARY INDENTATIONS. SOME SOLVENT BASED "CUT-BACK" ASPHALT-BASED ADHESIVES MAY CONTAIN ASBESTOS FIBERS THAT ARE NOT READILY IDENTIFIABLE. DO NOT USE POWER DEVICES, WHICH CAN CREATE ASBESTOS DUST IN REMVING THESE ADHESIVES. THE INHALATION OF ASBESTOS DUST MAY CAUSE ASBESTOSIS OR OTHER SERIUOS BODILY HARM.

SUBSTRATE CONDITIONS:

- Porous Substrates: Resilient flooring may be placed into adhesive after 10-20 minutes of open time. Install resilient flooring into adhesive when the spacing in between the adhesive ridges transitions from opaque to clear. Roll with a 100 lb. roller immediately after the flooring is placed, ensuring complete contact with the adhesive. DO NOT exceed the recommended working time of the adhesive.
- Non-porous Substrates: Install resilient flooring into adhesive when it becomes 80% clear (dry to touch, it's tacky but no transfer to fingers). This will normally require 30-60 minutes of drying time at suggested installation temperature and humidity. DO NOT exceed the recommended working time of the adhesive.
- Roll with a 100 lb. roller immediately after flooring is placed, ensuring material has complete contact with adhesive.

IMPORTANT: DO NOT use any adhesive that is not intended to be used with resilient flooring. Loss of adhesion can result if the flooring is not installed within the working time of the adhesive. DO NOT allow the adhesive to "skin" over or dry. Too much open time will result in insufficient bonding. Perform bond testing to determine compatibility of adhesive to substrate. A primer can always be used to promote better adhesion.

NOTE: Open time and working times may vary based on temperature, humidity, substrate porosity, trowel size, and air flow.

RESILIENT TILE AND PLANK PRODUCTS:

1. Ensure that moisture tests (per ASTM F 2170) have been conducted and that the results do not exceed the moisture limitations of the adhesive being utilized.
2. The permanent HVAC system is operational prior to, during, and after installation and is regulated between 60-80^{o}F.
3. Do not stack more than 5 cartons high in the installation area.
4. Flooring material and adhesive must be acclimated in the installation area for a minimum of 48 hours.
5. Use the recommended trowel notch for the adhesive. These typically are 1/16" wide x 1/32" deep x 1/32" apart (U) notch trowel only (unless using a resilient spray adhesive)
6. Material should always be visually inspected prior to installation. Any material installed with visual defects will not be considered a legitimate claim as it pertains to labor.
7. Make sure all material is from the same batch number or dyelot.
8. Install tiles and planks running in the same direction using the directional arrows on the backing side.

9. Ensure that all recommendations for subfloor and jobsite conditions have been met prior to the beginning the installation. Directional designs are optional, however, once the installation has commenced, you have accepted those conditions.

LAYOUT AND INSTALLATION:

1. ReSolute LVP – install using conventional tile and plank installation techniques. Plank products should have a minimum of 6-8" seam stagger.
2. Carefully determine where to begin tile or plank installation.
3. It is customary to center the rooms and hallways, so borders are not less than half a tile or plank.
4. Working out of multiple boxes at a time is recommended.
5. Make sure cut edges are always against the wall.
6. To properly cut LVT/LVP products score the top side of the material with a utility knife. Bend the product and finish the cut through the backside. This will ensure the cleanest cut. It may be necessary to use a heat gun to cut around vertical obstructions. Allow the heated LVT/LVP to return to room temperature before installation.
7. Cutting the product into a fine point may lead to delamination. Use an ethyl cyanoacrylate based super glue to help fuse the LVT/LVP point together. Be sure to clean all glue from the decorative surface immediately. Alcohol based super glues may cause the vinyl to swell.
8. Roll the plank/tile with a 3 section 100 lb. roller. Re-roll the entire glued floor area with the 100 lb. roller within the working time of the adhesive. Continue to roll the floor throughout the working day to ensure proper bond.

NOTE: Recommended to use floor protection after installation. DO NOT use plastic adhesive based protection system.