

For questions concerning J+J Flooring LVT installation, call our Customer Relations Department at 800-241-4586. For EF Contract LVT installation questions call 800-451-1250. For Pentz LVT Installation questions call 1-866-706-9745 ext. 8407. GENERAL

#### INFORMATION:

- The use of Commercialon® Premium Modular + LVT Adhesive, Advance Modular / RH+ Adhesive or Tile Tabs® (Tile Tabs is approved for 5mm LVT only and must be used for full installation, no perimeter only application) is required.
- Use only Portland based patching and leveling compounds. Do not install LVT floor covering over gypsum-based patching and / or leveling compounds.
- It is recommended that LVT floor covering installation 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. Read all the instructions prior to beginning installation.
- Perform adhesive bond testing to determine compatibility with the substrate. Commercialon Premium Primer can be utilized to promote adhesion.
- For heavy rolling loads (such as Hill-Rom beds) or heavier static loads a full spread of adhesive is required. Use the "wet set" adhesive technique for these types of installations.
- Engineered Floors Commercial Division adheres to current ASTM/ISO testing method and tolerances for measurements of length, width and squareness of resilient floor planks and tiles. Please take tolerances into consideration during the planning phase of the project especially when either basketweave or parquet installation methods are specified.

#### ADHESIVE REQUIREMENT:

Commercialon Premium Modular + LVT Adhesive and Advance Modular / RH+ Adhesive are pressure sensitive adhesives designed for installation of LVT and is required for installation of J+J Flooring / EF Contract / Pentz's LVT. Warranty coverage requires the use of this adhesive or Tile Tabs (approved for 5mm LVT only). Failure to use Commercialon Premium Modular + LVT adhesive, Advance Modular / RH+ Adhesive or Tile Tabs will void warranty. J+J Flooring / EF Contract / Pentz will not be responsible for the adhesive bond or product failure where other adhesives have been used.

#### STORAGE AND HANDLING:

- The building must be enclosed and the HVAC in continuous operation. The LVT and adhesive must be conditioned to room temperature for 72 hours prior to installation, during the installation and continuous following completion of the installation. The ambient air relative humidity must be between 10%-65% with the floor and room temperature between 55- 85 degrees Fahrenheit. The indoor temperature should never fall below 55 degrees Fahrenheit or above 85 degrees Fahrenheit regardless of the age of the 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 sun- light, 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 LVT flooring should be adequately illuminated during all phases of the installation process.
- Controlled environments are critical.
- DO NOT install LVT 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 55°F or a maximum of 85°F for a minimum of 7 days prior to, during, and continuous after installation. The indoor temperature should never fall below 55 degrees Fahrenheit or above 85 degrees Fahrenheit regardless of the age of the installation.

#### ADHESIVE APPLICATION:

- 5mm LVT can be installed using a perimeter or grid adhesive application method.
- 5mm LVT can be installed using Tile Tabs in a full install method (no perimeter install allowed).
- A minimum of 18" of adhesive is required for every 900 SF or 30 ft. in any direction.
- 3mm or 2.5mm LVT requires full spread adhesive.
- The spread rate for Commercialon Premium Modular + LVT Adhesive or Advance Modular / RH+ Adhesive is approximately 900 square feet per four-gallon bucket and must be spread using a 1/16"x1/32"x1/32" U-notched trowel. Allow to dry until transparent or adhesive does not transfer to finger when touched.
- The coverage rate for Tile Tabs is 1,080 SF per roll.

#### SUBFLOOR INFORMATION:

Note: All substrates to receive LVT flooring shall be dry, clean, smooth, and structurally sound. They must 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.

Latex or dissimilar adhesives must be mechanically scraped down to bare residue flat with the concrete substrate or covered with a skim coat of Portland based patch reinforced with polymers. Dissimilar adhesive residue must also be covered with a one coat application of Commercialon Premium Sealer. Failure to remove or seal dissimilar adhesives may cause installation failure, plasticizer migration, buckling, etc.: these conditions will not be covered under warranty.

An intact moisture vapor barrier is required for on-grade or below-grade subfloors. RH probe type testing and pH testing is required prior to the installation start. These test results are to be recorded and saved. The results from testing must not exceed the manufacturer's published limits. Since both moisture and pH can increase over time, the manufacturer is not responsible for product failure as a result of changes to subfloor conditions, including increases in moisture pH levels post installation.

New concrete must be fully cured and free of moisture (see ASTM F 2179-2). New concrete requires a curing period of approximately 90 days.

#### CONCRETE SUBFLOORS:

- NEW AND EXISTING 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 DRIVE, WEST CONSHOHOCKEN, PA 19428; 610.832.9585; <http://www.astm.org>
- All concrete substrates must be tested for RH (Relative Humidity) according to ASTM F 2170-2. Acceptable relative humidity probe testing results are up to 90% RH.
- Alkalinity tests are to be performed according to ASTM F710. Maximum acceptable pH is 9.0. For test results that range between 9.0 – 11.0 Commercialon Premium Sealer is required when using Commercialon Nexus + LVT Adhesive.
- Substrates must 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.
- 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 2170-2 RH (Relative Humidity) is required for the J+J Flooring / EF Contract / Pentz warranty. Three tests must be conducted for the first 1000 SF, and one additional test for each additional 1000 SF. Acceptable results from testing are up to 90% RH.
- An intact moisture vapor barrier is required for on-grade or below-grade subfloors. RH probe type testing and pH testing is required prior to the installation start. These test results are to be recorded and saved. The results from testing must not exceed the manufacturer's published limits. Since both moisture and pH can increase over time, the manufacturer is not responsible for product failure as a result of changes to subfloor conditions, including increases in moisture or pH levels post installation.

#### GYPCRETE:

Gypcrete subfloors must be fully cured and free of high moisture (see ASTM F 2170-2). Gypcrete requires a curing period of approximately 90 days. Additionally, Gypcrete must be treated using primer in advance of applying adhesive.

#### 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 must be used to promote adhesion.
- Three RH tests should be conducted for areas up to 1000 SF. Conduct one additional RH for each additional 1000 SF.

#### RADIANT HEAT:

- Radiant heated substrates must not exceed 85 degrees 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 hours prior to installation lower the temperature to 70 degrees F and maintain that temperature for 48 hours after installation. After continuous operation of the radiant system, ensure the temperature of the surface does not exceed 85 degrees F.
- Use of an in-floor temperature sensor is recommended to avoid overheating.

#### 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.
- For all unfinished wood surfaces apply a coat of primer to promote adhesion.
- Double-layered APA rated plywood subfloors should be a minimum 3/4" 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, flake board, OSB, hardboard or similar are not recommended subfloor material and require the additional layer of 1/4" 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 J+J Flooring/ EF Contract / Pentz.
- J+J Flooring/ EF Contract / Pentz LVT flooring is not recommended directly over fire-retardant treated plywood or preservative treated plywood. The materials used to treat plywood may cause problems with adhesive bonding. An additional layer of APA rated 1/4" 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.

**WARNING! DO NOT SAND, DRY SWEEP, DRY SCRAPE, DRILL, SAW, BEADBLAST OR MECHANICALLY CHIP OR PULVERIZE EXISTING 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](http://www.rfci.com)

#### EXISTING FLOORCOVERINGS

##### Resilient Floorcoverings

- 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 EXISTING 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 EXISTING RESILIENT FLOORING MAY BE MORE SUSCEPTIBLE TO INDENTATION.

##### OTHER FLOORING TYPES:

- VCT, Quarry Tile, Terrazzo, Ceramic Tile, Poured Floors (Epoxy, Polymeric, Seamless)

NOTE: Tile grout joints and textured surfaces must be filled with an embossing leveler or substrate manufacturer approved material.

- 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.

#### LAYOUT AND INSTALLATION:

1. Install J+J Flooring / EF Contract / Pentz LVT 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 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: Use Kraft paper, fiber board or similar for floor protection after installation. DO NOT use plastic adhesive-based protection system.

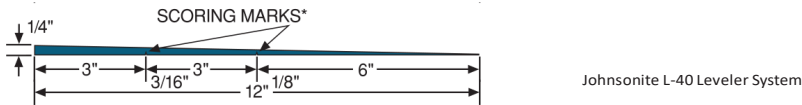
COMPLETING THE INSTALLATION:

To avoid shifting or dislodging of LVT, do not move furniture or put LVT into service until the area is completely anchored. Roll entire area with a 100 lb. roller in both directions (north- south and east-west). It is also required that plywood or hardboard be laid over the new LVT surface when transporting heavy furniture on carts or dollies.

FLOORING TRANSITIONS:

In the event that J+J Flooring / EF Contract / Pentz’s 5 M LVT requires elevation in order to evenly transition in thickness to other J+J Flooring / EF Contract / Pentz products, the use of a subfloor leveler system is required. The leveler system installed between the subfloor and back side of the LVT will allow from 0-1/4” of gradual elevation.

The component which we recommend is Johnsonite’s LS-40 (or equal) that includes scoring marks for even cutting at the desired thickness of the leveler material. When this system is utilized, no transition strips are needed.



*Note: J+J Flooring / EF Contract / Pentz’s 3 M LVT should not be elevated due to reduced thickness of the product. Use of a leveler system with 3 M LVT may result in damage to the product that will not be covered under our warranty.*

THESE INSTALLATION INSTRUCTIONS ARE INTENDED FOR THE EXPERIENCED INSTALLER. ADHERENCE TO THESE PROCEDURES WILL RESULT IN A QUALITY INSTALLATION. ANY QUESTIONS CONCERNING THESE IN- STRUCTIONS OR ANY SPECIAL SITUATION ENCOUNTERED SHOULD BE DIRECTED TO J+J FLOORING / EF CONTRACT /PENTZ’S CUSTOMER RELATIONS DEPARTMENT.