

INSTALLATION MANUAL FOR VINYL TILE

1. COMMENT

The manufacture instructs that installation be made in accordance with the installation methods for vinyl floor tile as established in the ASTM F710-11 standard for subfloor preparation. It is also required that appropriate adhesives be used and that maintenance be carried out using the detailed product information found in the Maintenance Guide.

Please note that the designs are deliberately not centralized or registered to enhance the aesthetic effect of the flooring.

1.1. SELECT

It is essential that the correct flooring be specified for a particular area bearing in mind traffic (both foot and wheeled), acoustic restriction, electrical, and anti-slip requirement. If you have any questions, please contact the KRS Inc. at 262.798.8900 or info@krsinc.com.

1.2. PROJECT PLANNING

The following guidelines should be noted to ensure accurate documentation prior to the commencement of work:

- a. Directional drawing if appropriate
- b. Detail of subfloor construction
- c. Information on pattern, border and/or coving requirements
- d. Tests for moisture and electrical resistance must be completed and approved
- e. Tests for screed strength and leveling must be completed and approved
- f. Unacceptable standard of workmanship must be stated
- g. Removal of waste product, off cuts, adhesives, etc. must be clearly documented

2. SUBFLOOR PREPARATION

- a. Substrate should be fully cured, smooth and flat. Surface should be level to 1/8" over 10' (3mm over 3m). Check surface level with a 10' (3m) straight edge
- b. Substrate should be clean, free of dust, curing sealers, oil and other contaminants
- c. Substrate defects should be repaired using an approved patching compound

2.1. TEST FOR MOISTURE

Under no circumstances should LSI tiles be laid on a subfloor that contains moisture readings in excess of 85% relative humidity or 8 pounds moisture per 1000 sq.ft. Similarly, the product should not be laid on subfloors that are susceptible to rising damp and/or hydrostatic pressure. Test for vapor emissions using ASTM F1869 Anhydrous Calcium Chloride test, as well as ASTM F2170 for relative humidity testing.

Alkalinity levels must also be tested with the acceptable range being 7.0 to 10.0pH. Test for Alkalinity or pH level using ASTM F710.

The extensive warranty issued by LSI will be nullified if these instructions are ignored. TEST ALL INSTALLATIONS! If you have any questions, please call KRS Inc. at 262.798.8900.

2.2. UNDERLAYMENTS (FLOOR SMOOTHING)

Cement based floor patches should be the only thing used to level the subfloor for tile installation. Floor must be absolutely smooth or tile will telegraph subfloor imperfections. Call the LSI Technical Department for your specific job site patching recommendations. In the case of Jypcrete or any similar type product, contact the LSI Technical Department for further installation instructions.

2.3. EXPANSION JOINTS

Tiles must never be laid over expansion joints. Neither should such joints be filled with sealant and/or mix of any kind. Contact LSI Technical Department for advice on what acceptable proprietary joint covers are available pertaining to your particular problem area.

2.4. SUITABLE SUBSTRATES

- a. Exterior-grade plywood, Group 1, CC type and other approved wood underlayment as per manufacturer's recommendations
- b. Concrete slabs with up to 8 pounds moisture vapor emission (ASTM F1869) and 85% RH (ASTM F2170)
- c. Cement based patching compounds over existing, properly prepared and fully bonded ceramic tile and fully bonded vinyl composition tile (VCT), one layer only
- d. Properly prepared and primed gypsum underlayment that meets ATSM F2418 requirements for compressive strength
- e. Radiant-heat systems that have been properly installed

Note: Do not install over any substrates containing asbestos, nonporous surfaces or adhesive residues including cutback adhesive.

2.5. WOODBLOCK FLOORS

Quite simply, do not lay LSI tiles directly on woodblock flooring. Similarly, do not overlay woodblock with any underlayment including ply or hardboard. In all cases, woodblock flooring must be removed and the subfloor rejuvenated.

3. PROCESS OF INSTALLATION

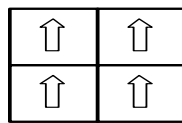
On receipt of the product ensure both the correctness of quantity and color as outlined in the original order. Ensure no damage has occurred during transit. Store the tiles perfectly flat. Store tiles and adhesive in a covered area at a minimum temperature of 55° – 81° F (13°-27° c). Tiles should not be installed until all other work, which could cause damage to the finished flooring, has been completed.

The tiles should be allowed to condition at room temperature or 72°F (22°C) and a relative humidity of 50% for at least 48 hours before installation. The temperature should also be maintained during and after the laying of tiles. Ensure that any under floor heating is switched off and that the slab is no hotter than 72°F (22°C) during the same period. 48 hours after completed installation, and only then, may the heating be slowly brought back to a maximum of 81°F (27°C). As earlier mentioned, ensure that all other trades have completed and cleared the area. Sweep and/or vacuum the whole area and make good where necessary following previous guidelines.

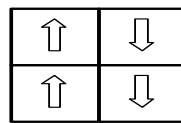
3.1. LAYOUT

Shuffle and alternate tiles and boxes. Do not attempt to pattern match. The designs are deliberately not centralized or registered to enhance the aesthetic effect of the flooring.

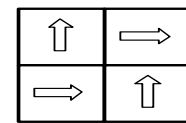
The following patterns can and are suggested to be directionally matched using the arrow on the back of each tile; Tread Plate, Hammered Aluminum, Sparkly Chips, Elements, Imagination Atlantic Water and Pacific Water (by pattern on the surface). Suggested pattern layouts for directional tiles below:



All tiles same direction

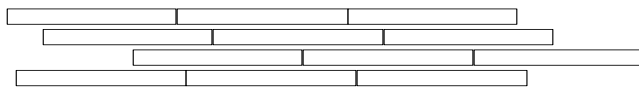


Columns

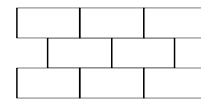


Checker Board

Wood strips or plank type tiles are to be installed in a random pattern as below:



Rectangular or Slab tile are best installed in an offset or bricklayers pattern as below:



When you are ready to start the installation commence from the centre and work out, (see MEASURE AND MARKOUT) loose-laying as you go. This will allow you to check for final appearance prior to adhesion.

3.2. MEASURE AND MARKOUT

The area to be laid should be measured in both directions and to within alcoves, if any. Introduce a chalk centre line from one side to the other ensuring that it is square to the wall and doorways. From the centre line loose lay tiles to ascertain whether small strips will have to be laid at the room perimeter. If this proves to be the case, adjust the centre line in either direction but ensure that it remains parallel with the original. In doing so, it will necessitate only a small cut off the perimeter. Introduce a further chalk line to bisect the former at the center. With a large framing square or by using the 3:4:5 triangle method, ensure a right angle is created. Loose lay tiles away from the second line as before and adjust accordingly.

3.3. ADHESIVE

If the substrate is porous, it may be necessary to introduce a primer at this stage. Ensure the usage of an adhesive compatible primer. This must be checked with the LSI Technical Department. The spread of the adhesive remains dependent upon site conditions at the time of installation. Humidity, airflow, and temperature all affect the amount of open time required. All manufacturers detail open time tolerances and their instructions should be followed. If you have any questions, please call KRS Inc. at 262.798.8900.

LSI only recommends the use of the following adhesives:

MAPEI Ultrabond G-21 or Ultrabond G-19 - For areas that are susceptible to high topical moisture; i.e. 6' out from freezers or fridges, front entrance, walk-in coolers, bar areas, restrooms and/or below grade .

LSI300 - For all other applications under 8 pounds moisture

Note: LSI300 Adhesive must be spread using a 1/32" x 1/16" x 1/32" (0.8 x 1.6 x 0.8 mm) U notched trowel which should yield approximately 175 sq. ft. per US gallon.

Contact the LSI Technical Department for adhesive recommendations before you start installation of tiles.

3.4. ADHESION, ON YOUR MARKS

Once the adhesive has become tacky, place the first tile in the corner where the first centre line bisects the second. Press the tile down in the centre working outward until all the air is expelled. Place the next tile in position, alternating direction continuing along the centre line presenting a two tile width, one either side of the aforementioned line. Tiles should be butted cleanly, evenly and snugly against the adjacent tile. Remove excess adhesive during work in progress and roll in both directions with a 100lb roller. Repeat procedure until main field is complete.

3.5. PERIMETER ACTION

If set-in cove skirting is being used, this should be glued to the perimeter prior to perimeter tile installation. If raised cove base is being used, this will be glued in place after the flooring has been installed.

4. PRECAUTIONS AFTER INSTALLATION

The adhesive must be allowed to dry for at least 48 hours before the floor is exposed to heavy traffic, water or cleaning materials. Light foot traffic is acceptable immediately. Since many factors enter into it, the cure time can extend to a week or more. Of all the factors that can inhibit the adhesive from curing, moisture has the greatest effect.

Never use strong acid or alkaline cleaners or waxes. This will cause yellowing and eventually will require more maintenance. Do not use a high speed floor polisher or propane powered high revolution buffer. These will cause damage to any high spots in the installation. After at least 48 hours all installations should be coated with a floor finish. See LSI Maintenance Guide for recommendations from Diversey and Taski. As 85% of all dirt entering a building is via foot traffic, LSI recommends the use of a barrier mat system to a minimum of 6 feet or 2 meters within the building entrance.

Should you have any questions not answered in this manual, please call KRS Inc. at 262.798.8900

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Flooring Solutions Beyond the Expected