

# BENTLEY ELEMENTS COLLECTION LVT

## SQUARE AND PLANK INSTALLATION GUIDELINES

BENTLEY MILLS CORPORATE OFFICE: 14641 E DON JULIAN RD, CITY OF INDUSTRY CA 91746  
800.423.4709

**This document refers to the following products:**

Product	Size	Installation direction	Seams treatment
Elements Tiles	See specifications	90°	None
Elements Planks	See specifications	Stair Step	None

**Note: This document refers to the following standards:**

- ACI 302.1R Guide for Concrete Floor and Slab Construction.
- ACI 302.2R Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials
- ASTM F710-11 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring
- ASTM F1869-11 Standard Test Method for Measuring Moisture Evaporation Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.
- ASTM F2170-11 Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using In-Situ Probes.
- ASTM F1516-13 Standard Practice for Sealing Seams of Resilient Flooring by the Heat Weld Method.
- Recommended Work Practices for Removal of Resilient Floor Coverings of Resilient Floor Covering Institute (RFCI).

### 1 STORAGE AND HANDLING

Stack boxes of tiles or planks not higher than 36” with the edges of the boxes flush to one another. Overhanging edges may curl the tiles or the planks. Handle all materials carefully and safely.

### 2 SUBFLOOR PREPARATION

- The General Contractor will supply a smooth, flat concrete finish ready to receive the new resilient sheet flooring in accordance with ACI 302.1R Guide for Concrete Floor and Slab Construction and ACI 302.2R Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials.
- The concrete subfloor will be cured for a minimum of at least thirty (30) days.
- The slab will have a tolerance of 3/16” (4.5mm) in a 10’ (3.05 m) radius.
- Prepare substrate as per ASTM F710 “Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring”.
- The concrete floor temperature will have to be maintained at a minimum of 65°F (18°C) for 48 hours prior, during, and 48 hours after the installation.
- The concrete slab, new or old, must be tested for moisture. We recommend having the tests performed by a recognized engineering firm. The ICRI website (International Concrete Repair Institute) has a list of certified technicians for the USA: <http://www.icri.org/Certification/Find-CCSMTTs.asp>
- The moisture tests must be performed as per ASTM F1869-11 “Standard Test Method for Measuring Moisture Evaporation Rate of Concrete Subfloor Using Anhydrous Calcium Chloride” and/or ASTM F2170-11 “Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using In-Situ Probes”.

# BENTLEY ELEMENTS COLLECTION LVT

## SQUARE AND PLANK INSTALLATION GUIDELINES

BENTLEY MILLS CORPORATE OFFICE: 14641 E DON JULIAN RD, CITY OF INDUSTRY CA 91746  
800.423.4709

- **Substrate moisture levels shall not exceed:**

	Concrete slab with an effective moisture vapor	Concrete slab with radiant heating system
Gerfix LVT Spray Adhesive	8-lbs / 90% RH	8-lbs / 90% RH
Gerfix TPS+ Adhesive	8-lbs / 90% RH	3-lbs / 75% RH

- Before proceeding with any work, inspect the subfloor surface and report in writing to the Project Manager and the General Contractor any visible defects on the surface such as cracks, bumps, rough areas or variations in evenness.
- Check the subfloor for grease, oil, paint, marker, spills, dust or any contamination that may adversely affect the adhesion of the flooring. Clean the subfloor appropriate to the existing conditions.
- Prohibit circulation of other trades in the installation area.
- Sanding of the subfloor will be mandatory in many cases; especially in areas where the subfloor has been contaminated with foreign products. It may be necessary to scarify or bead-blast concrete surface to remove existing adhesives, paint, concrete sealers or other surface applied materials.
- Curing compounds of any types have to be completely removed by means of sanding, scarification or bead-blasting. Self-dissipative curing compounds must be removed using the same methods.
- The General Contractor shall patch and repair all cracks, voids and other imperfections of concrete with high strength Portland cement based patching compounds such as Mapei Ultraplan, Ardex K-15, Ardex Feather Finish, Mapei Planipatch or equal, approved by the manufacturer. Do not use gypsum based patching materials.
- After completion of sanding, patching and leveling, vacuum or sweep entire surface of concrete to remove loose dust and dirt before starting the installation of material.
- For installation where a Gypsum Concrete has been poured, contact Bentley Technical Services 800.423.4709.

### 2.1 SUBFLOORS WITH RADIANT HEATING SYSTEMS

Bentley LVT floorings can be installed over subfloors with radiant heating systems.

To ensure proper installation and enable proper adhesion, respect the following conditions:

- In all cases, it is necessary to respect the curing time of the concrete slab.
- Before the installation, the radiant heating system must have been turned on for at least 4 weeks to stabilize the moisture content of the concrete slab and to avoid any moisture peak when the system will be in service after the installation of the flooring.
- A certified technician should turn on the system as per the manufacturer recommendation.
- The temperature must be kept at its maximum (85°F (30°C)) for 8 days prior to the installation of the floor covering.
- At all time, the maximum temperature shall not exceed 85°F (30°C).
- To install on a subfloor with a radiant heating system, the system must be turned off 48 hours before, during and 72 hours after the installation. Always verify that the room temperature is not less than 65°F (18°C) during that period of time.
- The heating system should be turned on gradually only 72 hours after the installation.
- Turning on the heat gradually will allow the substrate and the flooring to adapt to the temperature change together.
- A sudden temperature change could result in adhesion problems.

# BENTLEY ELEMENTS COLLECTION LVT

## SQUARE AND PLANK INSTALLATION GUIDELINES

BENTLEY MILLS CORPORATE OFFICE: 14641 E DON JULIAN RD, CITY OF INDUSTRY CA 91746  
800.423.4709

### SETTING THE RADIANT HEATING SYSTEM PRIOR AND DURING THE INSTALLATION:

10 days to 2 days prior at 85°F (30°C)	48 hours prior to the installation turned-off	Turned-off during the installation	72 hours after installation the system remains turned-off	Gradually turn on the system
--	---	------------------------------------	---	------------------------------

**WARNING: NEVER COVER THE FLOORING WITH RUGS, MATS, RUNNERS, ETC. THESE WILL AFFECT THE HEAT TRANSFER OF THE RADIANT SYSTEM AND COULD DAMAGE THE FLOORING.**

- All along during the drying period of the concrete slab, moisture tests shall be performed per the conditions stated in ASTM F1869-11, ASTM F2170-11 standards and substrate conditions will meet ASTM F710-11 standard.
- Moisture tests for subfloors with Radiant Heating Systems shall not exceed 3-lbs/ 1000sq.ft./24hrs per ASTM F1869-11 and 75% RH per ASTM F2170-11.

### 3 INSTALLATION OF MULTI-LAYER TILES & PLANKS

#### 3.1 USAGE

- Tiles and planks are recommended for commercial and institutional applications.

#### 3.2 ACCLIMATION

Under normal conditions, the tiles and planks must be taken out of their boxes and placed in the location of installation 16-24 hours prior to the installation. In cases where the flooring may have spent a long period of time in colder conditions, more time will be required for acclimatize.

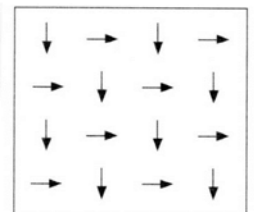
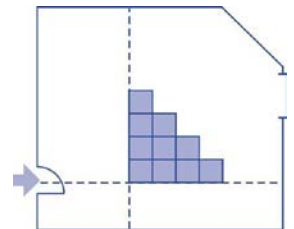
#### 3.3 MATERIAL INSPECTION

- Boxes are clearly marked with batch numbers and the product should be checked for match before installing.
- Inspect all materials carefully to verify that correct colors, lot number, patterns, quality and quantities have been shipped as ordered. Do not install, cut, or fit any material that has visible defects.
- A contractor that installs material that has visible defects or damage without prior consent of Bentley deems the product acceptable for installation and therefore accepts full responsibility for said material.

**Note:** Tiles have directional arrows and should be installed by alternating the arrows 90° forming a “checkerboard” pattern. Should the tiles be installed in the same direction, the seams will then be more visible, this is an observable fact inherent to the product.

#### 3.4 TILE LAYOUT

- Chalk the center lines of the work area in both directions so that one line is parallel to the length of the room and that the second line is on a 90° angle to the first line.
- Position center lines to allow the perimeter tiles to be  $\geq$  to ½ tile.
- Before spreading adhesive it is recommended to lay one or two rows of tiles along both center lines to check for proper alignment.
- Mix tiles from different boxes to obtain a consistent layout.
- Be certain this tile is installed on the lines to fit the 90° angle.
- After the first tile is in place, begin laying tiles outward along both guide lines.
- Press tiles firmly against adjoining tiles and press into the adhesive.
- Begin stair-stepping the tiles into the field area.
- It is recommended to install the tiles in a checkerboard pattern (90°)



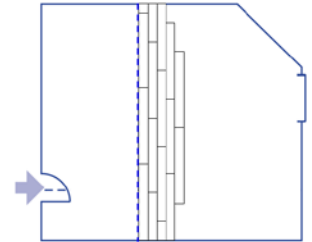
# BENTLEY ELEMENTS COLLECTION LVT

## SQUARE AND PLANK INSTALLATION GUIDELINES

BENTLEY MILLS CORPORATE OFFICE: 14641 E DON JULIAN RD, CITY OF INDUSTRY CA 91746  
800.423.4709

### 3.5 PLANK LAYOUT

- Chalk the center lines of the work area so that the line is parallel to the length of the room.
- Before spreading adhesive it is recommended to lay one or two rows of planks along center line to check for proper alignment.
- Mix planks from different boxes to obtain a consistent layout.
- Be certain the planks are installed right on the center lines.
- After the first row of planks is in place, begin laying planks outward.
- Press planks firmly against adjoining planks and press into the adhesive.
- Begin stair-stepping the planks into the field area.



### 3.6 GERFIX SPRAY LVT & PLANK ADHESIVE INSTALLATION METHOD

- **Always refer to the Gerfix Spray LVT & Plank Adhesive Technical Data Sheet.**
- Follow the guidelines indicated on the adhesive label.
- Wipe your hand across the surface, if any dust transfers, the substrate is not clean.
- Damp-mop substrate if dust is present.
- Starting from the center lines and working outward, apply the adhesive to the subfloor.
- To ensure uniform adhesion of the entire surface, spray a workable amount of adhesive at one time.
- Allow the adhesive to tack-up completely so there is no transfer when gently touched.
- Once flooring is placed into the adhesive, immediately roll thoroughly with a 3 sectional 100-lbs (45 kg) steel roller in both directions.

### 3.7 GERFIX TPS+ ACRYLIC ADHESIVE INSTALLATION METHOD FOR TILES AND PLANKS

- Use only Gerfix TPS+ adhesive.
- Follow the guidelines indicated on the adhesive label.
- Recommended trowel size is 1/32" x 1/16" x 1/32" (0.8 mm x 1.6 mm x 0.8 mm), covering 185 - 245 sq. ft. per US gallon (4.53 - 6.0m2 per liter).
- Starting from the center lines and working outward, apply the adhesive to the subfloor.
- To ensure uniform adhesion of the entire surface, apply a workable amount of adhesive at one time.
- Maintain a uniform spread rate. Replace trowel (or trowel blade) with every pail used. Immediately after troweling the adhesive onto the concrete use a medium napped paint roller saturated with adhesive to flatten out visible trowel marks and even out the adhesive.
- "Open time" of the adhesive is dependent upon porosity of the substrate, temperature, and humidity. It is important that the installers familiarize themselves with the adhesive before starting the installation. Insufficient open time for acrylic adhesive will cause bubbling. A too long open time will result in poor adhesive transfer.
- Once flooring is placed into the adhesive, immediately roll thoroughly with a 3 sectional 100-lbs (45 kg) steel roller in both directions.
- Continue laying tiles by butting the edges together without too much pressure.
- During the installation, always double check the flooring for bubbles with the lights on and off.
- Avoid adhesive displacement by prohibiting traffic for a period of 48 hours and 72 hours for rolling loads.
- **The use of walking boards is mandatory to protect from adhesive displacement during installation.**



# BENTLEY ELEMENTS COLLECTION LVT

## SQUARE AND PLANK INSTALLATION GUIDELINES

BENTLEY MILLS CORPORATE OFFICE: 14641 E DON JULIAN RD, CITY OF INDUSTRY CA 91746  
800.423.4709

#### 4 ONCE THE INSTALLATION IS COMPLETE

- Do a visual inspection of the project.
- Repair every imperfection before leaving the project.
- Make sure that every vertical obstacle, such as a door frame, is well trimmed to avoid damaging the LVT flooring and sealed with a silicone sealer or an equivalent product.

#### 5 ADHESIVE

<b>USAGE AND RH MOISTURE LIMITS FOR GERFLOR APPROVED ADHESIVES</b>	
<b>PRODUCT: ELEMENTS COLLECTION</b>	
<b>Adhesives:</b>	
<b>Gerfix TPS+</b>	<b>75% RH ***</b>
<b>Gerfix TPS+</b>	<b>90% RH</b>
<b>Gerfix LVT Spray</b>	<b>90% RH</b>
Corresponding concrete slab moisture tolerance between ASTM F2170 RH moisture test & ASTM F1869 Ca Cl test	
RH test	Ca Cl test = lbs/1000 Sq. Ft. / 24 hrs
90 %	8 lbs
<b>NOTE:</b>	
<ol style="list-style-type: none"> <li>1) pH level shall not exceed 11 at all time</li> <li>2) *** Radiant heating systems</li> </ol>	
<b>Gerflor's position on moisture testing:</b>	
<p>Gerflor requires concrete slab moisture testing and recognizes 2 test methods to measure the moisture in a concrete slab:</p> <ul style="list-style-type: none"> <li>• ASTM F2170 RH test</li> <li>• ASTM F1869 Calcium Chloride test</li> </ul> <p>The best choice is to do both tests side by side. This way, all the information needed to properly assess the moisture condition of the concrete slab will be available.</p> <p>When performing the tests, both tests need to pass the moisture requirements.</p> <p>Should there be a decision to perform only one type of test, Gerflor prefers the ASTM F2170 RH test, as this is the most accurate test available at this time.</p>	

For any information, please refer to Bentley Technical Services at 800.423.4709.

End of Document