

# Castle Collection

## GENERAL INSTRUCTIONS Revised 10/01/2023

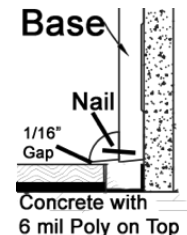
	Residential	Commercial
Acclimation	24 hours in HVAC climate-controlled area.	
Acclimation Interior Conditions	65° F to 75° F (maximum) degrees	
Expansion spacing at vertical surfaces	3/8" minimum (See Preinstallation) Over 60'LF Run 1/2"	1/2" minimum
Subfloor Flatness	<b>ASTM F 710 / ASTM F 1482</b> - 3/16" in 10' (1/8 in 6' allowed) patch or grind accordingly	
**Substrate Moisture Limits Concrete	Concrete: 7 lbs. Calcium Chloride Test or 85% RH; see installation instructions below with 6 mil Poly	
*Concrete Slab (6 mil poly) Over concrete	Required	Required
Wood frame Structure	It is not recommended on raised wood frame structures because this floor does not breathe. If done black 6 mil poly should be placed on the ground cover. Crawl Space must be well ventilated. Bottom side of subfloor must not exceed 14% moisture and the interior 12% moisture content. Conditioned crawl space is required to control moisture content of subfloor. Otherwise, the subfloor can reach a dew point. Interior HVAC should be running, and the substrate should be dry from construction moisture before starting installation.	
Sunrooms	Not Recommended	
Overlay Existing Floor	Never over wood, ceramic tile should be stable and be prepped for self-leveler or patch compound to create a flat subfloor	
Underlayment Required	Not permitted on products with factory attached acoustical backings	Not permitted on products with factory attached acoustical backings

- Acclimate flooring for 24 hours in a HVAC controlled area. Flooring temperature, storage environment and installation environment should have no more than 10°F temperature difference when performing installation; flooring temperature should always be greater than 60°F. If a wide variation exists acclimate flooring in the installed environment for 24 hours prior to installing. Ideal acclimation temperature range is 65°F to 75°F.
- Residential installations with rooms greater than 60 ft. use 1/2" expansion spacing on the perimeter at all vertical surfaces, door frames, cabinetry, etc. Commercial installation requires use in rooms greater than 60 ft. with 1/2" expansion spacing at all vertical surfaces, door frames, cabinetry, etc.
- Wooden door frames must be undercut completely to studs and allow for expansion. Metal door frames shall have flooring material scribed to the frame allowing for recommended expansion spacing from above. Door jamb moldings shall be kept 1/16" above the surface of installed flooring to allow free movement.
- \*On all installations passing moisture test, 6 mil visqueen overlapping the joints 6" taping the seams waterproof tape like duct tape is required.
- \*\*Use of a 2-part epoxy that achieves 100% RH barrier is required on slabs on which moisture testing fails to meet industry standards. These tests should be conducted as per ASTM instructions and limits for moisture content observed. Then follow the previous step applying 6 mil polyfilm.

- Since underlayment is attached, do not add second layer it could damage the locking system and void the manufacturer's warranty. If additional underlayment is used make sure it is warranted for double lay applications.

## **Pre-Installation**

- The space where flooring is to be installed shall be fully enclosed and the permanent HVAC system shall be operational at 65° - 76° F before, during, and after acclimation and installation.
- LNG SPC floating floors should be protected from direct sunlight and not exposed to direct sunlight for extended periods of time by use of blinds, drapes or suitable window coverings or be in use in areas of large amounts of direct sunlight exposure.
- Do not use tapping blocks, adjustable spacers (screw type) or other tools common to hardwood and laminate flooring installation to prevent damage to the locking mechanism. A small, 6", piece of LNG SPC scrap flooring with the top joint tongue intact should be used as a tapping block and locked into the joint groove before tapping.
- LNG SPC floating flooring is designed to be installed as a "floating" floor. Do not secure individual planks or tiles to the subfloor with mechanical fasteners or adhesives. *Do not install cabinets, heavy entertainment centers, kitchen islands, door hardware or other non-movable objects on top of or through vinyl floating floors.*
- Use of a small, soft bristle brush to clean the joints prior to locking will ensure that there is no debris which will cause stressing or failure of the joint after interlocking the pieces together.
- This product cannot be installed with full spread adhesives.
- Use care when installing wall moldings and transition strips to not fasten through floating flooring planks. Nail quarter-round parallel to the subfloor. A spacing of at least a 1/16" shall be kept above the floor when installing moldings over the surface of the floor. Floating floors need to be able to move. Do not caulk the gap between the floor and quarter round.
- If the floorplan has several door openings, it is required to put door transitions. Doorjamb's can have less than recommended expansion ie: doorways off of hallways such as bedrooms and offices. This allows for rooms to expand and contract separately from the main living area.
- Improper locking of the mechanism may cause one or more of the following conditions in your flooring: joints to be distressed resulting in a 'peaked' appearance; delamination due to separation of joints from normal environmental temperature changes; cupping or side joint failures.



## **Subfloor Requirements**

All substrates regardless of composition must be smooth and flat to within 3/16" (4.76mm) in 10 feet or achieve an "F32" rating by use of mechanical grinding/sanding or substrate appropriate patching/leveling compound. Floors that are uneven can cause the planks to become out of square damaging the floor and locking system. Raised frame wood structures should be properly fastened to an APA rated underlayment. Furthermore, if the subfloor moves and deflects it should be addressed. If subfloor moves it can damage the floors locking system, causing separation of planks. Crawlspace's require to have HVAC controlled climate year-round to control moisture content of subfloor.

## Approved Substrates:

- Above, on grade concrete, lightweight concrete, and Gypsum without hydrostatic pressure, excess moisture, or alkalinity; must be fully cured and dry, free from curing compounds, sealers, etc.
- APA rated underlayment, or exterior grade plywood with sanded face exterior grade and that meets a rating by use of mechanical grinding/sanding or substrate appropriate patching/leveling compound. Follow guidelines list above for crawlspace climate control.
  - ASTM F 710 Standard Practice for preparing Concrete Floors to Receive Resilient Flooring
  - ASTM F 1482 Standard Practice for Installation and Preparation of Panel Type Underlayment's to Receive Resilient Flooring
  - Properly prepared and well bonded existing resilient floor covering, single layer only, Cement Terrazzo, ceramic tile, marble – must be flat and properly prepared.
  - Old adhesive residue that has been properly prepared.
  - Never lay over existing wood floors.
  - •LNG SPC Flooring should not be laid on a subfloor that does not meet local building codes.

## **Subfloor Preparation**

*LNG SPC flooring is susceptible to damage by excessive subfloor moisture and is an ideal breeding ground for mold, mildew, fungus and mites - all of which can contribute to an unhealthy indoor living environment. If excess moisture is found in the substrate, proper remediation steps should be taken prior to installation. Make sure proper moisture testing is done.*

All substrates must be properly prepared and tested according to the following instructions.

## **Concrete Subfloors**

1. On all installations passing moisture test, 6 mil visqueen is required. Visqueen should overlap at the joints at least 6", taping the seams with waterproof tape like 3m Duct Tape or equivalent.
2. Concrete substrates should be properly prepared according to the latest revision of ASTM F710, *Preparing Concrete Floors to Receive Resilient Flooring*.
3. All concrete substrates, regardless of grade or age of slab, must be properly tested using one of the methods outlined below for warranty to apply. Acceptable test methods are the ASTM F 2170 and ASTM F1869. Testing shall be conducted according to the relevant ASTM documentation and instructions of the manufacturer of the testing equipment. Consult Technical support for RH values greater than 85% or MVER 7 lbs./1,000 sf/24 hrs.
4. Concrete Alkalinity / pH Test shall be conducted in accordance with ASTM standards. Acceptable level of pH in the substrate is between 7 and 10.
5. If floors exceed moisture test, a Moisture Vapor Emissions remedial action is required. Use a 100% RH epoxy sealer or system that manufacturer

recommends under SPC. Advertised 100% RH epoxy products to consider are Bostik SlabCoat, or Sika MB or equivalent.

## **Wood Subfloors**

- a. SPC is not recommended on wood frame structures without climate control crawlspace. A conditioned crawl space is required to control moisture content of subfloor at 75% RH year-round. Otherwise, the subfloor can reach a dew point. Interior HVAC should be running, and the substrate dry from construction moisture before starting installation. SPC does not breathe it can trap moisture. High moisture in the subfloor can rot, and/or buckle subfloor cracking the locking system. Environmental issues like this are not covered by the warranty. Be sure the crawlspace is designed properly for hot humid summer conditions.
- b. All wood substrates should be prepared according to the latest revision of ASTM F1482 *Installation and Preparation of Panel Type Underlayment's to Receive Resilient Flooring*.
- c. The plywood substrate should not exceed 14% moisture content on the bottom side and 12% on the interior.
- d. This SPC rigid core flooring product is waterproof and reliably secures the flooring panels on all four sides. However, excessive moisture in a wood raised frame subfloor could promote mold, mildew, and other moisture related issues like the trapping of moisture emissions under the flooring, which may contribute to an unhealthy indoor environment. SPC products may not be the best choice on raised wood frame construction without HVAC on the opposite side.
- e. Wood panel subfloor construction shall be a minimum of 1" in total thickness.
- f. Panels designed as suitable underlayment shall be at a minimum 1/4" in thickness, dimensionally stable, fully sanded face to eliminate grain texture or show through and have a written manufacturer's warranty and installation instructions. Panels shall be installed according to manufacturer's instructions regarding stapling pattern, sanding and filling of joints, and acclimation to installed environment. Where not specified, consult ASTM 1482 or the relevant document from the American Plywood Association.
- g. Gypsum and Lightweight Cellular Concrete Substrates shall be per ASTM F2419 or F2471 respectively. Follow manufacturer instructions and guidelines on installation.
- h. Existing resilient flooring must be single layer only, thoroughly stripped of all wax, floor finish, dirt and other contaminants. Be firmly bonded to the substrate, flat and smooth with no curling edges or loose seams. Must not be of a cushion back, loose-lay, or perimeter bonded floor.
- i. Adhesive residue shall be properly prepared by hand scraping, mechanical scraping or grinding used as a primary means of removing old adhesive residue. Black cutback/asphalt adhesives shall only be scraped by hand to remove any loose patches, trowel ridges and puddles so that only a thin residue layer remains. Residues shall be properly covered using a Portland based patching compound properly mixed with the manufacturer's recommended latex/acrylic additive. Do not use chemical adhesive removers.

## **Ceramic, Porcelain, Marble and Granite Tiles**

The above tiles are suitable and must be properly bonded with intact grout joints and free of cracks or loose tiles. Surface of tile and grout joints should be free from sealers, coatings, dirt and contaminants. Unsecure tiles and/or improperly flattened surface prep can cause the locking mechanism to break. Properly

prepare the surface of tiles by grinding any high areas and using a suitable Portland-based leveling compound and primer to fill in all low areas.

## **Installation and Layout**

LNG SPC floating flooring is designed with an I4F drop locking mechanism. This floor is installed engaging the side locks folding down and tapping the end joint with a rubber mallet to engage the lock system. The end joints should be staggered a minimum of 12" to ensure a good lock. If boards need to be removed, disengage the side locks, and slide the boards apart. If you lift the end joints after locking them, damage can be done to the locking system. Check lock system and discard pieces with broken locking mechanism.

### **Layout**

1. Install flooring perpendicular to direct sunlight sources, including large windows, doors, etc.
2. It is important to balance the layout of the plank format. Proper planning and layout will prevent narrow piece widths at wall junctures. Determine layout to prevent planks having less than half the width or very short length pieces.
3. Dry lay a section of plank from the center lines of the room to one wall to determine that the pattern is centered and fit. Border cuts should be measured and should not be less than half the width of a plank or tile. If the cut row falls under these conditions, adjust the first row at the center line to make the centerline match the centerline of the row of planks.

### **Installing Floating Vinyl Flooring**

*Use of several 3/8" spacer blocks along the first wall will ensure the proper spacing is achieved and that floor does not 'walk' back towards the wall during installation.*

- a. Determine if the starter row will need to cut from the layout instructions above. It will be necessary to cut off the unsupported tongue on full planks on the edges placed against the wall so that a clean, solid edge is toward the wall.
- b. Starting in the farthest left, upper corner of the room positions the first piece so that both the head and side seam groove is exposed. This requires installing the product from left to right in the room.
- c. Install the second piece in the first row by angling the end tongue into the end groove of the first piece. Be careful not to bend the corner of the piece. Maintain an expansion gap of 3/8" from the wall. Continue this row until the last piece is installed allowing for the 3/8" expansion gap on the cut of last piece; utilize the cut off for starting the next row if it exceeds 12".
- d. Install the first piece in the second row by inserting the long side tongue into the groove of the piece in the first row. This is best done with a low angle (20° to 30°) of the plank.
- e. Install the second piece in the second row by inserting the short end tongue into the previously installed piece end groove. Align the piece by sliding it towards the first row so the long side tongue tip is positioned just over the groove lip of the piece in the first row; you will need to fold down the adjacent piece tapping the end with non-marking mallet to engage the locking system. Working from the end seam, at a low angle (20° to 30°) insert the long tongue into the groove of the adjoining piece. Very little force is required to seat the tongue into the groove. You should feel the tongue lock into the groove. Settle the pieces flat on the floor and

ensure the top joint is fully engaged. Tap with non-marking mallet to engaged end locks. Do not force end locks, sometime dirt gets in the lock system that needs to be removed by a brush or vacuum, so it engages properly.

f. Continue installing pieces along the wall in the second row as in steps above remembering it is critical to keep these two rows straight and square, as they are the “foundation” for the rest of the installation. Check for squareness and straightness often.

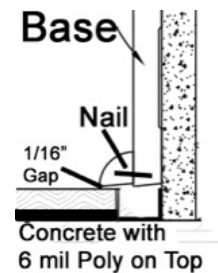
g. Continue installing pieces, being certain to maintain a random appearance and offset end seams by at least 12”. Maintain a 3/8” to 1/2” expansion gap at all fixed vertical surfaces.

h. Extra expansion is required at 6OLF.

i. It is required to put moldings in doorways to break the rooms off hallways, allowing for separate expansion and contraction of areas in the home. It is not recommended to install throughout the house without any doorway moldings.

### **After Installation Steps**

1. Be sure planks are set, flat and have tight edges.
2. Make sure that when installing moldings or transition strip that use care when installing wall moldings and transition strips to not fasten through floating flooring planks. Nail quarter-round parallel to the subfloor. A spacing of at least a 1/16” shall be kept above the floor when installing moldings over the surface of the floor. Floating floors need to be able to move. Do not caulk the gap between the floor and quarter round.
3. If the LV plank is not the last product installed it must be protected from construction traffic and damage. Utilize a reinforced fiber protective board “ie: Ram Board” and cover the floor.
4. Initial maintenance can be performed immediately after installation of the LNG SPC flooring. Cleaning utilizing a neutral pH cleaning solution. A Bona Kemi mop is recommended. White, green or blue abrasive pads can be used to remove heavier deposits. Rinse the floor thoroughly and allow to air dry. Do not overwater the flooring.
5. Daily and weekly maintenance by sweeping vacuuming or dust mopping the floor as needed to remove dust loose dirt and grit. In high traffic areas this may be a daily or twice daily procedure. Use only vacuums that do not have bristle beater bars or metal heads.
6. Clean liquid spills immediately to prevent the possibility of stains, slips or falls.
7. Damp mop the floor as needed to remove dirt and stains. Use a neutral pH cleaner like Bona Kemi Luxury Vinyl cleaner with microfiber mophead. Use a gentle white n if needed to remove ground in dirt. Soft white bristle brushes can also be used on flooring with embossed surfaces.



### **Preventative steps**

1. Do not lock the floor with heavy static object that could restrict the floors movement. ie: entertainment center, aquariums, gun safes, kitchen Island, hot water heater, vanities, tubs and a toilet.
2. Use walk-off mats at all entry areas to keep dirt, sand and water off of the floor. Clean the mats on a regular basis. If mats are placed directly on top of the LNG SPC floor should be sure the mats have a non-staining back. If using a rubber mat make sure it is recommended for use over LVP flooring.

3. Furniture shall have protective felt glides of at least 1" in diameter to minimize indentations or scratching to the surface of the floor. Do not use narrow chair glides! Felt pads are also excellent protection for the floor for furniture that will be frequently moved directly across the floor.
4. Furniture legs should not be placed on joints of the floor to prevent locking mechanism damage.
5. Pet nails can scratch the finish. Make sure nails are trimmed regularly.
6. Do not move heavy furniture, appliances, or fixtures directly across the floor. It can break the locking system. Use protective boards or appropriate furniture movers designed for use over hard surface flooring.
7. Protect the floor from direct sunlight by using appropriate window coverings.
8. Areas with caster chairs must have thick protective mats under the chairs. Use chair mats at desks to protect the floor from damage due to chair legs or casters. Periodically clean caster wheels and check for wheels that may be broken or no longer rotating. Replace damaged wheels immediately.
9. Avoid use of metal or razor scrapers to remove dirt, residues, or other marks from flooring. This will damage the protective wear layer of the vinyl flooring.