

A.C.E. Waterproof Flooring Installation Guide

For Products Featuring the Angle/Angle Locking System

ATTENTION – PLEASE READ BEFORE INSTALLING

Important: Carefully inspect all planks for defects. This inspection should include the products color, quality, finish and locking system. The visual characteristics, pattern and shading of the product may vary from the sample. The suitability of ACE flooring and accompanying products is the responsibility of the installer/owner. Any plank or tile that is considered questionable in appearance or dimensions should not be installed. ***Planks installed with visible defects are not covered under warranty.***

KEYS FOR A SUCCESSFUL INSTALLATION:

- Visually Inspect – Carefully inspect all planks for any defects.
- Subfloor Prep – Subfloor should be dry and level to 3/16" per 10 ft. radius.
- The use of an additional pad is not recommended.
- Check for Moisture – 85% RH / 3.0lbs per 1000' CaCl₂ / 3.5% Concrete Encounter Meter / 12% Wood Moisture Meter
- Perimeter Expansion – Leave a minimum of 5/16" expansion for remodel and 7/16" expansion for new home construction around the perimeter. (Note: new homes require more expansion because they have not settled)
- HVAC – HVAC should be operational, running, and set to optimal living conditions 5 days before installation begins.
- Optimal Living Conditions – temperatures between 55-80 degrees Fahrenheit and relative humidity between 30-55%.

FOR BEST VISUAL REPRESENTATION OF YOUR FLOOR

This flooring replicates the look of a natural product which has natural variations in color, texture, and sheen/gloss. For best visual effect, work from 3-4 boxes and shuffle planks or tiles. Avoid installing similar planks or tiles next to one another and creating a stairstep visual. Keep end joints staggered a minimum of 8".

SUBFLOOR PREPARATION & MOISTURE

Subfloor should be dry and level to 3/16" per 10 ft. radius for best installation results. Making sure the subfloor is properly prepared and flat to this specification will help reduce deflection under foot, joint failure, and ensure customer satisfaction.

All types of flooring can be susceptible to failure if moisture conditions are not properly monitored and maintained. While this product is waterproof regarding topical moisture, it's not to be used as a moisture barrier, nor can it withstand excessive vapor pressure from the subfloor. Excessive moisture can get in the walls and structure of the home. Moisture-related problems underneath flooring can also become health issues as mildew, mold, gaps, bumps and unsecured flooring pose additional risks to anyone walking over them. Make sure your concrete is cured and tested for moisture, and that a moisture barrier is installed in the crawl space and strongly recommended under an ACE floor over a concrete subfloor. A minimum 6 mil polyethylene moisture barrier is required under ACE products 3.5mm or less, when installed over concrete subfloors. Always check the subfloor for elevated levels of moisture: Readings should not be in excess of 85% RH / 3.0lbs per 1000' CaCl₂ / 3.5% Concrete Encounter / 12% Wood Moisture Meter.

If readings exceed the levels above, the flooring should not be installed until they have dropped below, or a vapor suppression system is put in place.

ACCLIMATION

As relative humidity varies in different parts of the country, acclimation of the jobsite and the flooring prior to installation is the most important precaution to take to ensure a successful installation. HVAC should be operational, running, and set to optimal living conditions 5 days before installation begins, with temperatures between 55-80 degrees Fahrenheit and relative humidity between 30-55%. Proper acclimation is necessary to adapt the moisture content of the flooring to the conditions of your environment. Improper acclimation can cause the floor to buckle and/or the planks to shrink or cup after installation.

PRE-INSTALLATION JOBSITE REQUIREMENTS

ACE cannot be held responsible for any failures or deficiencies related to site conditions. It is the installer/ owners' responsibility to ensure that the jobsite conditions and jobsite subfloor are environmentally and structurally acceptable prior to the installation of any ACE flooring. All substrates must be clean, flat, dry, and structurally sound. Installations where wheelchairs (power or manual) would be used is not recommended.

Carefully examine the flooring prior to installation for color, finish, sheen, and quality. Ensure adequate lighting for proper inspection. If flooring is not acceptable, contact your supplier immediately and arrange for replacement. ACE cannot accept responsibility for flooring installed with visible defects.

Flooring should be one of the last items installed in any new construction or remodel project. All cabinets and islands should be installed prior to flooring.

Crawl spaces must be a minimum of 18" (46 cm) from the ground to the underside of the joists. A ground cover of 6–20 mil black polyethylene film is essential as a vapor barrier with joints lapped 8" and sealed with moisture resistant tape. The crawl space should have perimeter venting equal to a minimum of 1.5% of the crawl space square footage. These vents should be properly located to foster cross ventilation. Where necessary, local regulations prevail.

Room temperature and humidity of installation area should be consistent with normal, year-round living conditions for at least one week before installation of flooring. Maintaining an optimum room temperature between 55-80 degrees Fahrenheit and a humidity range of 30-55% is recommended.

WOOD SUBFLOOR:

- Screw down loose or squeaky sections of plywood and replace areas that are damaged.
- Wood subfloors should be moisture tested with an appropriate wood moisture meter, and the results must be no more than 12% on average. Test the subfloor moisture in several locations. Higher readings indicate a moisture concern that needs to be corrected before installation can begin.
- Allow wood subfloors to breathe! Never apply sheet plastic over wood subfloors.
- Wood subfloors must be constructed according to local building codes, be structurally sound and deflection free.
- 30 lb. roofing felt or vinyl tile can be used to build up (in layers) low areas on wood subfloors.

CONCRETE SUBFLOOR:

- All concrete substrates should be properly prepared according to ASTM F710. New concrete subflooring should be cured for approximately 30 days per 1" of slab thickness. Slabs are hygroscopic, so moisture conditions begin long before the flooring is installed and continues changing for the life of the slab as the moisture conditions around it changes. If the concrete slab has not been properly dried and cured before the flooring is installed, moisture and/or vapor problems are almost guaranteed. The use of a moisture barrier over new concrete subflooring is strongly recommended.
- Grind down high spots and fill in low spots with an appropriate Portland cement-based patch (allow to cure fully).
 - A moisture test is strongly recommended. Acceptable tests are ASTM F1869 Calcium Chloride test, or ASTM F2170 using in-situ probes, to test the humidity of the slab. Slabs with moisture levels exceeding 3lbs per 1000sqft using the Calcium Chloride test, over 85% when using the RH test, or above 3.5% on a concrete encounter meter are a means for additional testing and monitoring. A slab with readings in excess of these levels must have an appropriate moisture barrier installed between the concrete and flooring, in an effort to prevent future issues from occurring.
- Moisture protection for floating floor installations should be a minimum 6 mil virgin polyethylene. Seams should be OVERLAPPED 8" and taped using a waterproof adhesive tape (duct tape). This vapor barrier should be installed up the wall at least 1". A minimum 6 mil polyethylene moisture barrier is required under ACE 3.5mm or less products installed over concrete subfloors.

- Slabs on or below grade must be free of hydrostatic pressure.

PRE-INSTALLATION SUBFLOOR REQUIREMENTS

All Subfloors must be:

- Dry: 85% RH / 3.0lbs per 1000' CaCl₂ / 3.5% Concrete Encounter / 12% Wood Moisture Meter
- Structurally sound
- Clean: Thoroughly swept and free of all debris
- Level: Flat to 3/16" per 10-foot radius

Wood subfloors must be dry and well secured. Nail or screw every 6" along joists to avoid squeaking. If not level, sand down high spots and fill low spots with a Portland Based leveling patch.

New concrete subflooring should be cured for approximately 30 days per 1" of slab thickness and should have minimum 6 mil polyfilm between concrete and ground. Subfloor should be flat and level within 3/16" per 10' radius. If necessary, grind high spots down and level low spots with a Portland leveling compound.

Ceramic Tile, resilient tile and sheet vinyl must be well-bonded to subfloor, in good condition, clean and level. Do not sand existing vinyl floors, as they may contain asbestos.

INSTALLATION TOOLS

For all installation methods:

- Tape measure
- Pencil
- Chalk line
- Crosscut power saw
- 3M Scotch-Blue™ 2080 Tape
- Rubber mallet
- 5/16" or 7/16" spacers

Acceptable subfloor types:

- CDX Underlayment Grade Plywood (at least ½" thick)
- Underlayment grade particleboard
- OSB (at least ¾" thick)
- Concrete slab
- Ceramic tile
- Resilient tile & sheet vinyl

STARTING YOUR INSTALLATION

Houses and buildings, as well as adjacent hardwood or laminate floors, expand and contract, therefore ACE recommends leaving a minimum 5/16" expansion gap for a remodel application and 7/16" expansion gap for new home construction between the perimeter walls and any adjacent building materials.

Work from multiple (3-4) boxes at a time. This will allow you to select the varying textures, colors, and sheens. Remember, it is the installers' responsibility to determine the expectations of what the finished floor will look like with the end user.

Begin installation next to an outside wall. This is usually the straightest and best reference for establishing a straight working line. Establish this line by measuring an equal distance from the wall at both ends and snapping a chalk line. The distance you measure from the wall should be the width of a plank or tile. You may need to scribe cut the first row of planks or tiles to match the wall in order to make a straight working line if the wall is not straight.

You may want to position a few rows before starting installation to confirm your layout decision and working line. When laying flooring, stagger end joints from row-to-row by at least 8" for planks, and equal to a half piece for tiles. For plank installations,

when cutting the last plank in a row to fit, you can use the cut-off end to begin the next row. If cut-off end is less than 8", discard it and instead cut a new plank at a random length (at least 8" in length) and use it to start the next row. Also avoid "stair stepping" end joints of adjacent planks as well as "H" configurations. Always begin each row from the same side of the room. ACE Floors can be installed using the floating or glue down method. A floating method can only be used if a pad is already attached. If no pad is attached, a glue down method can be used only over manufacturer's recommended substrates. Stauf D737 adhesive, or equivalent, is recommended for any glue down application where the pad has been removed. Do not install ACE floors over an additional pad or foam underlayment unless approved by manufacturer.

INSTALLATION INSTRUCTIONS

Inspection: Inspect material in daylight for visible issues prior to installation. Check if subfloor and site conditions comply with the specifications described in these instructions. If you are not satisfied, contact your supplier immediately and do not install.

Before laying: Measure the room to determine plank layout. For best visual results, planks in the first and final row should be cut no less than half the width of the plank. Purposely mix and arrange planks in a pleasant blend of shades. Lay planks preferably following the direction of the main source of light. The use of expansion moldings is required for floor surfaces exceeding lengths of 60 ft in either direction.

INSTALLING THE FIRST ROW:

1. Starting from the left with the tongue-side facing the wall, carefully place the first board in place, using spacers to leave a minimum 5/16" expansion gap for a remodel application and 7/16" for a new construction application between wall and edges of the plank.
2. Align and attach the end joints of the remaining planks in the first row by inserting the tongue into the groove while holding the plank at a 20° to 30° angle from the floor. Apply pressure inward and down until the planks lock together. The planks are now fully locked. Continue in this manner until reaching the final board in the first row.
3. Cut the final plank to length, no less than 8".

CONTINUING THE INSTALLATION:

4. For plank installations, if the cut plank is at least 8" in length, use it to begin the second row. If the cut plank is shorter than 8" do not use it. Instead, begin with a new board that is at least 8" in length and allows 8" between the end joints on the adjacent planks.
5. Begin the second row by inserting the tongue on the long side of the plank into the groove of the plank in the first row. Hold the plank in a 20° to 30° angle while applying pressure inward and down until they lock together. To complete the row, it is necessary to lock the short end of the next plank into the previous plank first before locking the long side of the plank. Angle the plank and push the tongue into the groove and adjust until the tongue locks into place. It may be necessary to lift both planks slightly to lock the joint together.
6. Carefully inspect the long edge and short ends of the planks for any gapping before moving on to the next plank. If you notice a gap, STOP, disengage, and reinstall the board to ensure a snug fit.
7. It is critical to keep the first two rows straight and square, as they are the foundation for the rest of the installation.
8. Install the remaining planks and rows in the same manner.
9. Be certain to maintain the recommended expansion space along the perimeter and achieve a random appearance by working out of multiple cartons.

INSTALLING FINAL ROW:

10. The last row may need to be cut lengthwise (ripped). Optimal stability is lost if the planks are cut less than half its width and should be avoided by accurately measuring the room.

11. Place the final row of planks on top of the last row installed and use an additional plank as a scribe to trace the contour of the wall. Cut planks along tracing.

12. Position cut planks in final row and tap all joints (long AND short ends) with the rubber mallet.

INSTALLING UNDER A DOOR JAMB:

1. Installation under moldings (such as door jambs) may require that the top lip of the groove on the end be reduced in size.

2. Using a small knife, carefully shave off the ledge of the groove.

3. After the groove ledge has been trimmed, place the board in place and tighten with a pull bar. The installer must be sure that the required expansion gap has been maintained and the flooring is not pinched.

4. If fit is not correct, re-trim as necessary.

5. Place a bead of cyanoacrylate adhesive, like Loctite 495, on the bottom lip of the groove.

6. Insert the tongue into the groove and engage with a pull bar. Hold the board in place with painter's tape (3M Scotch-Blue™ 2080 Tape) until the glue is dry. Do not use masking tape or duct tape as they may damage the floors finish.

In-floor Radiant Heat:

- Electric heating mats and hydronic heating systems that are not embedded into the subfloor are not recommended for use underneath ACE floors.

- Concrete subfloors must be allowed to properly cure and dry prior to operation of the radiant heating system.

- Radiant heating system should be in operation for 3 weeks prior to installation of the flooring.

- Set the systems temperature at 65°F (18.3°C) for 24 hours before, during and 24 hours after flooring installation. Gradually increase the temperature to the preferred operating level over the course of a week after flooring installation.

- Surface temperature must not exceed 85°F (29.4°C).

- T-moldings must be used to separate heating zones.

ACE Floors can be installed over an embedded radiant-heated floor using the floating or glue down method. A floating method can only be used if a pad is already attached. If no pad is attached, a glue down method can be used only over manufacturer's recommended substrates. Stauf D737 adhesive, or equivalent, is recommended for any glue down application.

Warning: Failure to follow adhesive manufacturer's guidelines and temperature limitations will result in failure and void warranty.

Stairs:

- Stairs must be clean, flat, and structurally sound.

- The attached pad must be removed from the plank before it is adhered to the stair substrate.

- Measure then cut planks and flush stair nose to length. It is recommended to dry lay and verify cuts prior to adhering.

- If multiple rows of planks are required, position width cut planks at the back of step along stair riser.

- Install stair nose directly to the tread with flooring installed up against the locking edge of the nosing.

- Locking system of plank and universal flush stair nose may need to be manipulated to coordinate.

- Limit traffic for 24 hours after stair installation is complete.

- Stauf D737 adhesive, or equivalent, is recommended.

AFTER INSTALLATION

- Flooring should be one of the last items installed in a project. In order to protect the floors while other trades are finishing their work prior to final cleanup and turnover to the owner, use rosin paper and only use 3M Scotch-Blue™ 2080 Tape to hold the rosin paper to the floor (other blue tapes may damage the finish). Clean the floor thoroughly before laying the rosin paper to ensure that no debris is trapped underneath. DO NOT USE plastic film or other non-breathing coverings as this can cause the floor to become damaged from humidity buildups.
- Install any transition moldings that may be needed (reducers, T-moldings, etc.). Allow a 5/16" expansion space between the edge of the floor and under the molding. Do not drive fasteners into the floor.
- Install wall and cabinet trim to cover the expansion space. Make sure to not pinch the floor between the trim and subfloor. Do not drive fasteners into the floor.
- Use 100% siliconized caulk where appropriate for aesthetic purposes. Do not caulk the perimeter of the floor.
- Dust mop or vacuum your floor to remove any dirt or debris.
- It is suggested that you clean the floor using a recommended pH neutral cleaner.
- A clean white cloth dampened with odorless mineral spirits may be used to remove adhesive residue. Never apply mineral spirits directly to the flooring.

Protection and Maintenance of Your Floor

Lasting beauty can be achieved through purchasing a quality floor covering and providing proper on-going maintenance.

- Avoid exposure to long periods of direct sunlight. Close blinds or drapes during peak sunlight hours. Floor covering subjected to excessive heat and light is subject to thermal degradation. Use appropriate precautions to minimize potential effects on the floor covering.
- Furniture should be moved onto the newly installed floor using an appliance hand truck over hardboard runways.
- Frequently moved furniture should be equipped with felt pads to avoid scratching the floor. Heavy furniture and appliances should be equipped with non-staining large surface floor protectors. Furniture with castors or wheels must be easy swiveling, large surface non-staining and suitable for resilient floors. Do NOT use ball type castors as they can damage the floor.
- All rolling chairs should only be used over chair mats.
- Pool tables should be moved into position, do not slide across the floor. A level subfloor and wider expansion gap is essential in these areas. Furniture pads are recommended to spread the weight for pool tables with smaller feet.
- Use walk off mats at entrances to prevent dirt and grit from being tracked on to the floor.
- Use non-staining mats. Rubber may discolor the floor.
- Do not track asphalt-driveway sealer or automobile-oil drips on to the vinyl floor covering.
- Oil or petroleum-based products can result in surface staining.
- Sweep or vacuum the floor regularly to remove loose dirt. Avoid using a vacuum with a beater bar.
- Do NOT use electric brooms with hard plastic bottoms with no padding.
- Do NOT use steam mops.
- Clean up spills immediately.
- Damp mop as needed using clean water and a diluted floor cleaner. Do NOT use harsh cleaners or chemicals on the floor. Do NOT use abrasive scrubbing tools. Do NOT use detergents, abrasive cleaners or "mop and shine" products.