ANGLE/ANGLE RIGID CORE INSTALLATION INSTRUCTIONS

Installation: All Grade Levels | Floating & Glue Down

KEYS TO SUCCESSFUL LOCKING INSTALLATION:

- Most installations will need approximately a 10% cutting allowance added to the square footage of the room.
- Proper conditioning of the job site is necessary. Flooring planks should not be exposed to sudden changes in temperature.
- Store, transport and handle the flooring planks in a manner to prevent any distortions. Distortions will not disappear over time. Store cartons flat, never on edge. Ensure that the flooring planks are lying flat at time of installation.
- Installations of carpet, metal strips and other transition moldings should not push fully into the flooring and should allow for some slight movement wherever practical.
- Protect the floor from heavy-rolling loads, other trades, and movement of appliances by using sheets of plywood or similar.
- Luxe with Rigid Core, Rigid Core Elements, Essentials, Essentials Plus, NexPro, NexPro X, NexPro XL, Natural Image flooring should not be exposed to direct sunlight for prolonged periods. It can result in discoloration and excessive temperatures may cause expansion.
- For Luxe with Rigid Core, Rigid Core Elements, Essentials, Essentials Plus, NexPro NexPro X, NexPro XL, Natural Image the use of drapes or blinds is recommended during peak sunlight exposure. If expansion, due to sunlight exposure, occurs in a specific area, we recommend adhering the planks/tiles with Armstrong S-295 or S-299 Adhesive using a fine-notch trowel.
- Where the room is larger than 20' (6.1 m) by 30' (9.14 m) or 500 sq.ft. (46.45 sq.m.) a minimum of 1/2" (12.7 mm) expansion zone is required around the perimeter of the room as well as against any fixed objects or Multi-Purpose moldings must be used to compensate for this movement. In areas larger than 52' by 52' or 2,700 sq.ft. the use of a minimum of 1/2" (12.7 mm) expansion zone and T-moldings or Multi-Purpose moldings is required.
- Use of T-moldings or Multi-Purpose moldings in doorways may be utilized to manage floor size. ¼" expansion space may be used for floor sizes up to 20' (6.1 m) by 30' (9.14 m) or 500 sq.ft. (46.45 sq.m.).

INFORMATION

Angle/Angle Rigid Core can be installed using either floating (no adhesive required) or glue-down methods. In either case, the planks should be installed 1/4" away from all vertical surfaces such as walls, pipes, etc. When installed in bathrooms, the gap should be filled and sealed with a good quality siliconized or acrylic caulk. The gap can then be covered with molding or wall base. Base cabinets may be installed on top Empower planks only, in homes and residential units. Please refer to the Armstrong Flooring Commercial Application Guide for specific installation recommendations in various commercial spaces.

PRECAUTIONS

WARNING!: Sawing, sanding, machining this product produces respirable dust, which may include crystalline silica. Crystalline silica is known to the State of California to cause cancer. For more information go to <u>www.P65Warnings.gov</u>. MAY CAUSE CANCER; MAY CAUSE RESPIRATORY IRRITATION, CAUSES DAMAGE TO ORGANS THROUGH PROLONGED OR REPEATED EXPOSURE.

Precautions: If power tools are used, they should be equipped with a dust collector and used in a well-ventilated area. If high dust levels are encountered, use an appropriate NIOSH-designated dust mask. Avoid dust contact with eyes and skin.

First aid: In case of irritation, flush eyes or skin with water for at least 15 minutes. Remove to fresh air if exposed to large amounts of dust.

WARNING: EXISTING IN-PLACE RESILIENT FLOOR COVERING AND ASPHALTIC ADHESIVES. DO NOT SAND, DRY SWEEP, DRY SCRAPE, DRILL, SAW, BEADBLAST, OR MECHANICALLY CHIP OR PULVERIZE EXISTING RESILIENT FLOORING, BACKING, LINING FELT, ASPHALTIC "CUTBACK" ADHESIVE, OR OTHER ADHESIVE.

These **existing in-place products** may contain 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 existing in-place 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 removal and disposal of material.

See current edition of the Resilient Floor Covering Institute (RFCI) publication Recommended Work Practices for Removal of Resilient Floor Coverings for instructions on removing all resilient floor covering structures or contact your retailer or Armstrong Flooring Inc. 1-800-233-3823.

The floor covering or adhesive in this package does NOT contain asbestos.

Tools:

- Tapping Block
- Pull Bar
- Saw
- Spacers

Subfloors & Substrates

All substrates listed below must be properly prepared and meet certain requirements. There may be other exceptions and special conditions (as noted below) for these substrates to be suitable for the locking installation system.

- Concrete dry and smooth on all grade levels
 - When installing Luxe with Rigid Core or Natural Image over concrete subfloors on or below grade we recommend using 6 mil polyfilm moisture barrier. We recognize that this will help prevent mold and mildew growth. The product alone should not be used as a moisture barrier, The polyfilm should be over lapped six inches at the seams.

- <u>Suspended wood subfloors with approved wood underlayments must have minimum of 18" well ventilated crawl</u>
 <u>space underneath</u>
- Suspended hardwood flooring that is fully adhered, smooth and square edge without texture
- Single-layer, fully-adhered, existing resilient floors must not be foam-backed or cushionbacked
- Ceramic tile, Terrazzo, Marble
- Polymeric Poured Floors (seamless)
- OSB-3/4"
- Particleboard 40lb. density or wafer board

For additional information relative to installation and subfloor preparation please refer to the Subfloors and Underlayments section of FloorExpert.com

DO NOT INSTALL OVER:

- Existing resilient tile floors that are below grade
- Existing cushion-backed vinyl flooring
- Carpet
- Hardwood flooring that has been installed directly over concrete
- In rooms with sloping floors or floor drains

Job Site Preparation

- For Empower during the service life of the floor, the temperature should never rise above 100°F (38°C) nor fall below 32°F (0°C). The performance of the flooring material and adhesives can be adversely affected outside this temperature range.
- Luxe with Rigid Core, Rigid Core Elements, Essentials, Essentials Plus, NexPro NexPro X, NexPro XL, Natural Image flooring should only be installed in temperature-controlled environments. It is necessary to maintain a constant temperature before, during and after the installation. Therefore, the permanent or temporary HVAC system must be in operation before the installation of resilient flooring. Portable heaters are not recommended as they may not heat the room and subfloor sufficiently. Kerosene heaters should never be used.
- All substrates must be structurally sound, dry, clean, flat, and smooth with minimal deflection. Substrates must be free from excessive moisture or alkali. Remove dirt, paint, varnish, wax, oils, solvents, other foreign matter and contaminates.
- Variations in subfloor flatness should not exceed 3/16" in 10' (4.76 mm in 3.05 m) or 1/8" in 6' (3.17 mm in 1.83 m). Level floors with a suitable cement-based self-leveling underlayment following the manufacturer's recommended guidelines

- Do not use products containing petroleum, solvents or citrus oils to prepare substrates as they can cause staining and expansion of the new flooring.
- For renovation or remodel work, remove any existing adhesive residue so that 100% of the overall area of the original substrate is exposed.
- When installing Luxe with Rigid Core, Rigid Core Elements, Essentials, Essentials Plus, NexPro NexPro X, NexPro XL, Natural Image over an existing resilient floor the surface should be filled and leveled using S-194 Flooring Patch, Underlayment & Embossing Leveler mixed with S-195 Underlayment Additive to fill and smooth any embossing in the old floor.
- Ceramic and marble grout joints, and irregularities in concrete should be filled and leveled using S-194 Flooring Patch, Underlayment & Embossing Leveler mixed with S-195 Underlayment Additive or S-466 to fill and smooth any embossing in the old floor.
- The area to receive resilient flooring materials and adhesives should be maintained between 65° F (18° C) and 85° F (29° C) for 48 hours before installation, during installation, and 48 hours after completion. Maintain temperatures between 32°F (0°C) and 100°F (38°C) thereafter for Empower. Maintain temperatures between 55°F (13°C) and 85°F (29°C) thereafter for Luxe with Rigid Core, Rigid Core Elements, Essentials, Essentials Plus, NexPro NexPro X, NexPro XL, Natural Image.
- For concrete substrates, conduct moisture testing (moisture vapor emission rate [MVER]) not to exceed 5 lbs. and/or percent relative humidity 95% (in-situ probe) for Luxe with Rigid Core, Rigid Core Elements, Essentials, Essentials Plus, NexPro NexPro X, NexPro XL, Natural Image. Bond tests must also be conducted for compatibility with the substrate for glue down applications. Please refer to the Moisture Testing and Bond Test recommendations found on <u>www.floorexpert.com</u> for details.
- Radiant heated substrates must not exceed a maximum surface temperature of 85°F (29°C).
- The subfloor panels must have a smooth, sanded face and show no swelling of edges or surface due to exposure to weather conditions or construction traffic.
- There are numerous products available for use as floor fills, patches, self-leveling underlayments, and trowelable underlayments. They include proprietary blends of compounds such as portland cement, calcium aluminates, and gypsum-based products. These are recommended by their manufacturers for smoothing rough or uneven subfloors, enhancing acoustical and fire characteristics of structures or as substrates to receive floor covering for otherwise unsuitable subfloor conditions. If the subfloor surface appears to be dusty then apply S-185 to the surface.

Completed installations of Empower may occasionally be heated up to 140°F (60°C) for a maximum of 24-hours. **Procedure: Glue Down Option with S-295 or S-299 Adhesives**

These floors are developed primarily as a floating installation system; however the full spread option can be employed in special situations if requested and agreed upon by the customer and installer. Warranties would remain unchanged when S-295 or S-299 is used.

• Apply S-295 or S-299 adhesive to 1/2 of the area at a time so that you can start the installation along the center starting line (see Layout & Fitting). Allow the adhesive to dry to touch. Begin laying planks along the center

starting line and install row by row including the cut pieces at the perimeter until 1/2 of the installation is complete. Stagger the end joints by at least 6 inches (15.2 cm). Apply adhesive to the remaining portion of the room, allow the adhesive to dry to touch and complete the installation of planks in similar fashion.

- Dry to Touch Approximately 30 minutes (tacky to touch with no transfer to fingers).
- Working time is 2 hours for S-295, 4 hours for S-299
- Use trowel (1/32" (0.8 mm deep, 1/16" (1.6 mm) wide and 1/32" (0.8 mm) apart.)
- After the planks are installed, immediately roll the entire floor with a 100 lb. roller. Use a hand roller in confined areas where the large floor roller will not reach, such as under toe kicks.
- The planks may be walked on immediately; however, the floor should not be exposed to heavy rolling load traffic for 72 hours after the installation. Use pieces of hardboard or underlayment panels to protect the floor when moving heavy furniture and appliances back into the room.

Safety and Clean Up:

Wet adhesive should be cleaned up immediately with soap and water on a clean cloth. Dried adhesive may require the use of odorless mineral spirits or denatured alcohol.

Layout and Fitting Installation Preparation:

Remove baseboard, quarter-round moldings, wall base, appliances, and furniture from room. For best results, door trim should be under-cut to allow flooring to move freely without being pinched. After preparation work, sweep and vacuum the entire work area to remove all dust and debris.

Whenever possible, plan the layout so that the joints in the planks do not fall on top of joints or seams in the existing substrate. The end joints of the planks should be staggered a minimum of 6" apart. Do not install over expansion joints. Avoid installing pieces shorter than 8" (20.32 cm).

Determine which direction the plank will run. Find the center of each of the end walls (the walls perpendicular to the long dimension of the planks and place a pencil mark on the floor. Connect these points by striking a chalk line down the center of the room. Do a dry layout of planks from the center line to the wall running parallel to the long direction of the planks to determine the width of the last row of planks (refer to Figure 1).



Fig. 1- Dry layout to determine width of border plank.

Avoid having border pieces less than ½ the width of a plank. If you find the border planks will be less than 1/2 the width of the plank, the center starting line should be shifted a distance equal to 1/2 the plank width. This will "balance" the room and provide for a larger cut piece at the wall.

Installation Methods:

Note: The subfloor must be thoroughly free from dust and debris. If the subfloor is dusty this may affect the product performance.

Note: Stagger end joints by 6". Cut pieces at the ends of rows should be 8" long or longer.

Position the first plank so that grooved edge is facing you. Install the product from left to right in the room. See Figure 2 for position of initial plank in the room.



Fig. 2 - Left corner of starting wall.

Occasionally, it may be necessary to install backwards. This may be done by sliding the grooves under the tongues and working them right to left, but this is more difficult.

Install First Row:

- 1. Inspect each piece prior to installation for damaged planks.
- 2. To minimize pattern repeats, always pull from at least 3 cartons while installing.
- 3. Install the second plank in the initial row by angling the end tongue into the end groove of the first plank. Install second and subsequent full pieces in the initial, or first, row by aligning short ends of the planks and locking into place. (see figure 3).
- 4. Use spacers along all sides that butt up against walls to maintain 1/4" (6.35 mm) to 1/2" (12.7 mm) expansion zone. Where the room is larger than 20' (6.1 m) by 30' (9.14 m) or 500 sq.ft. (46.45 sq.m.) a minimum of 1/2" (12.7 mm) expansion zone is required around the perimeter of the room as well as against any fixed objects.



Fig. 3 - Angle end tongue into end groove on planks in the initial row

- 5. When measuring the last piece in the row, subtract 1/4" (6.35 mm) from the end of the board to maintain expansion zone.
- 6. Cut decorative side up if using a hand saw or decorative side down if using a power saw to minimize chipping. A shear tool may also be used. Note: On thinner material planks are easily cut with a tile cutter or by using a straight edge and utility knife. Score the face of the plank several times and snap it. If it doesn't separate, lightly cut through the back on the fold mark.
- If the cut-off piece from the first row is 8" (20.32 mm) or longer, use it to start the second row. If it is less than 8" (20.32 mm), cut a full board in half and use that.

Install Remaining Rows:

- 1. Continue laying planks, one row at a time and staggering the end joints.
- 2. Install the first plank in the second row (and subsequent rows) by inserting the side tongue into the groove of the adjacent plank in the first row (see figure 4).



Fig. 4 - Angle long side into prior row.

3. Keep this at its natural angle slightly raised off the subfloor. Then angle the short end of the next plank in the row to lock into the previous plank (see Figure 5).



Fig. 5 - Angle end of next plank

4. Then align the plank so the long side tongue is positioned just over the groove lip of the adjacent plank in the prior row. Working from the end joint, with a low angle, insert the long side tongue into the groove of the adjoining plank (see figure 6) until you feel the tongue lock into the groove.



Fig. 6 - Locking long side with ends already locked

5. Continue installing planks across a row until you reach the wall on your right.

Continue installing planks. Maintain a random appearance by offsetting the end joints by least 6 inches. Always be certain that the planks are fully engaged. If slight gapping is noticed, place a cut piece of flooring (bridge piece) in the side groove that spans the ends of two adjacent planks within a row. Then tap the side of the plank with a tapping block. (see figure 7)



Fig. 7 - Tap side of plank with tapping block

When fitting in areas such as door casings it may be necessary to use a flat pull bar to engage the lock. Continue installing the remaining rows in similar fashion. For planks, maintain the 6["] minimum staggered end joints between rows and for planks maintain the 1/4["] gap at perimeter and vertical surfaces.

Reversing Direction

If needed, the product can be installed in the reverse direction. If this installation method is required it will be a right to left installation. When installing the product in the reverse direction insert the tongue into the groove. Engage the groove into the tongue sliding the tile to the right with the tongue just touching the previous tile. Then place the bridge at the joint between the two tiles. Using a pull bar placed on the edge of the vinyl, engage the tongue into the groove by using the angle tap method. Continue this technique to complete the installation working in the reverse direction using the angle tap installation method.

FINISHING THE JOB

Replace molding or wall base, allowing slight clearance between the molding and the planks. Nail the molding to the wall surface, not through the flooring. At doorways and at other areas where the flooring planks may meet other flooring surfaces, it is preferable to use a "T" molding (multi-purpose trim), or similar, to cover the exposed edge but not pinch the planks. Leave a small gap between the planks and the adjoining surface.

COORDINATED TRANSITIONS AND MOLDING PIECES

Armstrong offers specially designed End Cap Molding, Multi-Purpose Trim, Flush Stair Nosing, and Overlap Step Nosing to complete the floor installation.

- When using construction adhesive, weigh down the transition strip evenly to ensure proper contact with the subfloor. Do not use an excessive amount of construction adhesive that could ooze out and fill the expansion zone.
- To allow the floating floor to move freely, never fasten the transition pieces to the flooring.
- Keep the placement of the transition strip such that the 1/4" (6.35 mm) expansion around the perimeter is maintained.
- When installing over a radiant heated floor, always use construction adhesive to attach transition pieces.

• To prevent core from being exposed, add a "return" to the ends of molding at outside corners; for inside corners miter at a 45° angle if corner is square or use a cope saw if corner is not square.

Multi-Purpose Trim

Fig. 8

Must be used in areas where the room is larger than 80' (24.38 m) in plank length or wider than 52' (15.85 m) in board width. May be used where the flooring continues through a doorway or passageway into another room.

- 1. Screw or nail a temporary spacer block 1/2" (12.7 mm) wide and a minimum of 1/2" (12.7 mm) high to the subfloor.
- 2. Install the floor up to the spacer block using Armstrong spacers to obtain a 1/4" (6.35 mm) expansion zone.
- 3. Leave the spacer block and spacers in place and complete the entire floor installation.
- 4. Remove the spacer block and spacers.
- 5. Install the trim by drilling 1/4" holes at the corresponding plug locations.
- 6. Install the plugs on the Multi-Purpose trim by sliding them into the ends and moving them into position, aligned with the holes drilled in step 5.
- 7. Press the anchors into the holes by hand as much as possible. Finish by tapping the trim down with a rubber mallet. If the holes are too large to hold the plug, fill the hole with quick drying adhesive and install the trim and weight it down until the adhesive cures.

End Cap



Fig. 9

Use when flooring ends against a vertical surface and where quarter round or wall base cannot be used- e.g. in front of a sliding glass door or under a toe kick. Additionally, the finished edge to this piece makes it an ideal fit against carpet. This piece uses a track for installation (Fig. 10).



Fig. 10

- 1. Install the Track so that the outside edge of the Track is 7/16" (11.1 mm) away from vertical surface or adjacent flooring.
- 2. Install the floor up to the Track using Armstrong spacers to obtain 1/4" (6.35 mm) expansion zone.
- 3. Snap End Cap into the Track System.

Overlap Stair Nose



Fig. 11

Use where flooring meets a step down or landing using the overlap method or on stair treads using the flush method.

- 1. Measure and cut step nose to length.
- 2. Apply construction adhesive to the back of the step nose. Carefully read cautions on container and follow the manufacturer's recommended instructions on the adhesive label.
- 3. Push the step nose onto the subfloor and anchor the step nose with finish nails.
- 4. When utilizing a flush installation the adjacent flooring planks must also be adhered to the subfloor (Fig. 12).



Flush fit recommended for series of steps/stairs.

Flush Stair Nose

Use where flooring meets a landing or on stair treads.



Fig. 13

Tool List

- Table Saw or Miter Saw
- 10" (25.4 cm) 60- or 80-Tooth Carbide-tipped ATB or Triple Chip Saw Blade
- Power Drill
- Hammer
- 6d Finish Nails
- Construction Adhesive
- 5-Minute Epoxy

Optional Tools

<u>Armstrong EverSeal Adhesive</u>

Preparation of Stair Treads

Treads and risers should be structurally sound, flat, dry, clean, smooth, and free from paint, varnish, wax, oils, solvents, and other foreign matter. Cut off any existing bullnose flush with the riser of the stair (providing the dimension change does not violate local building codes) (Fig. 14).



Fig. 14

Installation of Stair Treads

- 1. Beginning at the bottom riser, measure and cut a piece of flooring to fit flush with the existing stair tread.
- Glue in place by applying a 3" (7.6 cm) serpentine bead of construction adhesive to the back of the flooring (Fig. 15). Refer to construction adhesive label for all recommendations, warnings and safety precautions.



Fig. 15

- 3. Press in place.
- 4. Measure and cut stair nose to length.
- 5. Dry fit the stair nose to the edge of the first tread with the molding nose overlapping the flooring piece on the riser below. Measure the distance from the edge of the stair nose to the next riser (Fig. 16).



Fig. 16

- 6. Measure and cut to width and length another piece of flooring for the stair tread. Using a utility knife or table saw, remove the tongue.
- 7. Apply a bead of construction adhesive in a 3" (7.6 cm) serpentine pattern to the back of the cut piece of stair nose and affix to the stair. (On wood subfloors, drill appropriate size holes into the installed stair nose and anchor with 6d finish nails (Fig. 17). Set nails using a nail punch. Fill holes with a repair stick).





- 8. To avoid shifting over concrete, allow enough time for the construction adhesive to set prior to continuing the installation. This time will vary depending upon the adhesive being used.
- 9. Apply construction adhesive to the tread of the existing stair and spread evenly using a 1/16" x 1/16" x 1/16" (1.59 mm x 1.59 mm) square-notch trowel.
- 10. Apply a bead of adhesive (preferably a 5-minute epoxy) to the lip of the stair nose. Following the manufacturer's recommendations, immediately remove any excess adhesive from the flooring surface.
- 11. Place the tongue side of the flooring against the stair nose, being sure that the floor plank surface is flush with the stair nose surface.
- 12. Push pieces together until joint is tight and flush, then remove excess adhesive.
- 13. Repeat steps 1–12 until installation is complete.
- 14. Allow 24 hours of curing time before exposing stairs to traffic.

Instructions for Installing Perpendicular to the Stair Nose

- 1. Measure and cut stair nose to length.
- 2. If installing stairnose against a groove end, shave the lock down to allow the stairnose to sit flush on the groove (Fig. 18).



Fig. 18

- 3. Apply a bead of construction adhesive in a 3" (7.6 cm) serpentine pattern to the back of the cut piece of stair nose and affix to the stair. Refer to construction adhesive label for all recommendations, warnings and safety precautions. (On wood subfloors, drill appropriate size holes into the installed stair nose and anchor with 6d finish nails. Set nails using a nail punch. Fill holes with a repair stick.)
- 4. To avoid shifting over concrete, allow enough time for the construction adhesive to set prior to continuing the installation. This time will vary depending upon the adhesive being used.
- 5. Using a utility knife or table saw, remove the tongue or groove from the floor plank to be installed to the stair nose.
- 6. Apply a bead of epoxy or Armstrong Everseal to the end of the plank that will meet the stairnose.
- 7. Place the piece of flooring into position and gently tap the pieces together using the tapping block.
- 8. A small, continuous bead of glue must ooze to the surface to ensure a water-resistant joint.
- 9. Remove the excess glue with a damp cloth followed by wiping with a clean, dry, cotton cloth.

Protection for Your Floor

- When moving appliances or heavy furniture it is always wise to lay a plywood panel, or similar, on your floor and "walk" the item across it. This protects your floor from scuffing, gouging and tears.
- Use floor protectors under furniture to reduce indentation. As a general rule of thumb, the heavier the item, the wider the floor protector needed.
- Place a walk-off mat at outside entrances to reduce the amount of dirt brought into your home. We strongly recommend mats without a latex or rubber backing since these backings can cause permanent discoloration.
- All Armstrong floor care products have been specifically developed to care for Armstrong floors.

Caring for Your Floor

- Sweep or vacuum regularly, to remove loose dirt which can scratch your floor. Note: We do not recommend vacuums that have a beater bar since it can visibly damage your flooring surface. Additionally, we do not recommend electric brooms with hard plastic bottoms with no padding as use may result in discoloration and deglossing.
- Wipe up spills as soon as possible. Never use highly abrasive scrubbing tools on any resilient floor.
- Wash your floor regularly with a vinyl floor cleaner such as <u>Armstrong Once 'n Done® Resilient & Ceramic Floor</u> <u>Cleaner</u>.
- Do NOT use detergents, abrasive cleaners, or "mop and shine" products. These products may leave a dull film on your floor.
- Over time, if the shine on your floor begins to dull, apply Armstrong <u>Satinkeeper® Low Gloss Floor Finish</u> to restore the appearance of your floor. Do NOT use paste wax or solvent based polishes.

• Vinyl flooring, like other types of smooth floors, can become slippery when wet. Allow time for floor to dry after washing. Immediately wipe up wet areas from spills, foreign substance, or wet feet.