



TIMELESS

LUXURY PLANK & TILE

by CONGOLEUM™

Structure® and Impact Commercial Installation
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STRUCTURE AND IMPACT COMMERCIAL INSTALLATION INSTRUCTIONS

ADHESIVE SELECTION

Proper adhesive selection is determined by the type of service the floor will receive. Using the proper adhesive will help maintain tight joints and reduce the potential for indentation from heavy loads.

AD-32 Adhesive is a pressure sensitive adhesive that can be used over all approved porous and non-porous substrates. AD-32 is recommended for residential and light commercial applications where heavy rolling and static loads are not expected. The adhesive is applied and then allowed to dry to a tack before installing flooring.

AD-62 Commercial Adhesive is a wet-set adhesive that dries hard and must be used in commercial applications, where heavy static or rolling loads are present, where temperature fluctuations are likely to occur or when adjustability during installation is desired. AD-62 is recommended for use over porous substrates and select non-porous substrates. DO NOT use AD-62 over existing resilient tile or sheet flooring products.

*AD-62 Adhesive is recommended for large tiles because it allows for adjustability during installation. AD-32 may be used when job site conditions require the use of a pressure sensitive adhesive.

Specialty Adhesives - Use Mapei G21 or G15 on installations in hospital rooms or medical facilities where Hill-Rom beds are used or where frequent surface wetting will occur such as in grocery store produce areas.

RECOMMENDED SUBSTRATES FOR AD-62 ADHESIVE

- **Porous Substrates (Concrete, wood underlayment and patching and leveling compounds)** - Before installing flooring allow adhesive to dry/flash for 5 to 10 minutes. The flooring must be laid in to wet adhesive to achieve 100% transfer of the adhesive to the back of the flooring when rolled.
- **Non-porous substrates (Cement terrazzo and some steel trowel finished concrete)** - It will be necessary to allow the adhesive to dry/flash longer when covering over non-porous surfaces. Before installing flooring allow adhesive to dry/flash 20 to 40 minutes or until the valleys between the trowel ridges turn clear (the trowel ridges will be wet) to achieve approximately 100% transfer of the trowel pattern to the back of the flooring when rolled. (See chart below).

GENERAL INFORMATION

- Always store and transport cartons on a flat surface neatly stacked no more than 15 cartons high. Ideal storage temperatures range from 50°F to 90°F (10°C to 32°C).
- Acclimate the room(s) flooring and adhesive at a constant temperature between 65°F and 85°F (18°C and 29°C) for 48 hours before, during and 72 hours after installation. Thereafter the room temperature should not exceed 90°F (32°C) or fall below 55°F (13°C).
- Make sure the pattern is correct and the lot numbers are the same on each carton.

Adhesive	AD-32 Pressure Sensitive Adhesive	AD-62 Wet Set Adhesive	
Service Rating	Residential and Light Commercial	Commercial	
Substrate	All Approved Substrates	Approved Porous Substrates	Approved Non-porous Substrates
Trowel Notch	1/16" x 1/32" x 1/32" U-notch (16 x .08 x .08 cm)	1/16" x 1/16" x 1/16" Square-notch (16 x .16 x .16 cm)	1/32" x 1/16" x 1/32" U-notch (.08 x .16 x .08 cm)
Spread Rate	200 - 250 ft. ² /gal (18.6 - 23.2 m ²)	125 - 150 ft. ² /gal (11.6 - 13.9 m ²)	185 - 245 ft. ² /gal (17.2 - 22.8 m ²)
Dry/ Flash Time	30 to 60 minutes	5 to 10 minutes	20 to 40 minutes
Working Time	6 hours	Up to 30 minutes	Up to 20 minutes

Note: AD-62 Adhesive flash time and working time may vary based on temperature, humidity, substrate porosity, trowel application and jobsite conditions.

SUBFLOORS AND PREPARATION

For detailed information on subfloors and preparation, please refer to supporting document "Suitable Substrates" at www.congoleum.com. Certain requirements may apply in order to prepare these substrates for resilient flooring. Substrates covered with existing flooring may also be acceptable for residential and light commercial applications.

Ensure that concrete subfloors are sufficiently dry by conducting moisture and pH tests. The subfloor, regardless of the type must be flat, smooth, clean, dry, structurally sound and free of paint, old adhesive residue, wax, grease, oil, solvent, curing and parting compounds and other substances that could interfere with adhesion or the performance of the flooring. Never use liquid adhesive remover or solvent cleaners for removing old adhesive residue or other substances on the subfloor. These substances must be mechanically removed. Conduct bond tests to confirm suitable adhesion to the substrate. The flatness of the subfloor is particularly important for keeping joints tight and in alignment when installing large format tiles. Deviations in the subfloor should not exceed 3/16" in 10' or 1/16" in 1'. Subfloor deflection should not exceed 1/360th of the span.

SUITABLE SUBSTRATES AND SURFACE MATERIALS

- Fully cured, dry concrete on all grade levels Moisture vapor emissions should not exceed 5 lbs. (ASTM F1869) or 80% RH (ASTM F2170) with a pH range between 5 and 9.
- Approved suspended wood floors and underlayments.
- Cement-based self-levelling underlayments and patching compounds.
- Prepared ceramic tile, marble and cement terrazzo
- Aluminum, steel and stainless steel.
- Radiant-heated subfloors where the maximum surface temperature of the floor does not exceed 85°F (29°C) in any area.

The following existing floors may be suitable for residential and light commercial applications only.

- Existing qualifying resilient sheet flooring-single layer, fully adhered and well bonded.
- Existing vinyl composition tile (VCT) - single layer, well bonded over, on or above grade level only.

Note: Some previously manufactured vinyl floor covering and asphalt "cutback" adhesive contain asbestos. For preparation or removal of these products, refer to the Resilient Floor Covering Institute's publication "Recommended Work Practices for the Removal of Resilient Floor Covering". These work practices must be followed. For a copy of the recommended work practices, please contact: Resilient Floor Covering Institute (RFCI) 115 Broad Street, Suite 201, La Grange, GA 30204 - www.rfci.com.

Warning: 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 products may contain asbestos fibers 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 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 the removal and disposal of the material. If you must remove old flooring material, contact the Resilient Floor Covering Institute to obtain a copy of the Recommended Work Practices for the Removal of Resilient Floor Covering.

JOB SITE CONDITIONS

- Resilient flooring installation should be scheduled after all other trades have completed their work.
- The HVAC systems must be in operation for at least 10 days prior to flooring installation and thereafter to maintain a constant temperature. Portable heaters may not provide adequate heat. Never use kerosene heaters.
- Proper acclimation of the room, subfloor, flooring material, adhesive and all installation accessory products is critical to the success of the adhesive and flooring performance. Installation over cold subfloors will delay adhesive flash time and dry time, effect the size of the floor and increase the potential for indentation and/or adhesive displacement. The subfloor temperature must be between 65°F and 85°F (18°C and 29°C) at the time of installation.
- Acclimate the room(s) flooring and adhesive at a constant temperature between 65°F and 85°F (18°C and 29°C) for 48 hours before, during and 72 hours after installation. Thereafter the room temperature should not exceed 90°F (32°C) or fall below 55°F (13°C).
- Unopen cartons of flooring should be neatly stacked in the room where they will be installed during the acclimation period. Open cartons just prior to installation.

SPECIAL INSTALLATION REQUIREMENTS

- All plank products should be installed with end joints randomly staggered at least 8" apart. Avoid using pieces less than 6" long at the end of the row.
- Planks and tiles can be combined on custom installations.
- 18" x 36" tiles can be installed in an ashlar layout with a 9", 12" or 18" drop pattern, depending on the desired appearance. A square layout with all 4 corners lined up is not recommended.
- 18" x 18" and 18" x 36" tiles have directional arrows printed on the back. Turn tiles randomly in alternating directions to achieve the best visual appearance.
- When installing flooring in a wet-set application with AD-62, the flooring must be rolled with a 100 pound three section roller immediately after completing each section and while adhesive is still wet and again 1 hour later.
- Proper adhesive selection and application will ensure good adhesion, tighter joints and reduce the potential for indentation from rolling and static loads.

INSTALLATION RECOMMENDATIONS

Layout

Layout will depend on the product size and adhesive system being used. Snap a chalk line down the center of the floor parallel with the long dimension of the room. Adjust the chalk line if necessary to avoid narrow pieces at the walls. When installing 18" x 18" or 18" x 36" tiles it will be necessary to snap additional chalk lines perpendicular (90°) to the center line. Also see special instructions for AD-62 wet-set adhesive applications.

When planning the layout make sure tile and plank joints fall at least 6" (15.2cm) away from joints in the underlayment and/or seams in existing flooring. Do not install over expansion joints.

Cutting

Flooring can be trimmed to fit using a sharp utility knife or tile cutter. When using a utility knife, score the surface of the tile or plank and flex it downward to break it at the score mark. Always place the cut edge against the wall.

FOR INSTALLATION WITH AD-32 PRESSURE SENSITIVE ADHESIVE

Apply AD-32 Adhesive over one-half of the subfloor up to the chalk line. Allow adhesive to dry completely to a tack, normally 30 to 60 minutes, longer in cool or humid conditions. Adhesive will turn from off white to clear when dry.

Carefully install the first row of tile or plank along the edge of the chalk line. When installing plank, start with a whole plank in the first row. Use 2/3 of a plank to start the second row and 1/3 of a plank for the third row. Thereafter install planks in a random layout offsetting end joints by at least 8". Avoid using small pieces less than 6". Complete each row including the cut piece at the end of the row. Always place cut ends against the wall. Complete the opposite side of the room and roll the entire floor in both directions with a 100 pound, three-section roller. Restrict to light traffic for the next 48 hours.

FOR INSTALLATION WITH AD-62 WET SET ADHESIVE

When working with wet set adhesive it will be necessary to start the installation at the wall to avoid walking on freshly installed flooring. Transfer the center chalk line to within 24" to 36" from the wall opposite the entrance of the room using a multiple of the plank or tile width. Snap additional chalk lines to divide the floor into sections for adhesive application.

Apply AD-62 Adhesive in the first section. Spread the adhesive evenly over the subfloor, keeping the trowel at a 45° angle to the surface. Apply only enough adhesive that can be covered with plank or tile within the 20 to 30 minute working time. Before setting tiles or planks, allow adhesive to flash off for 5 to 10 minutes over porous surfaces or 20 to 40 minutes over approved non-porous surfaces. Do not walk on or work on freshly laid flooring until the adhesive has set sufficiently to eliminate shifting.

If unavoidable use a kneeling board. Fitting flooring net to the walls will reduce the possibility of tiles shifting.

Carefully install the first row of tile or plank along the edge of the chalk line. *When installing plank, start with a whole plank in the first row. Use 2/3 of a plank to start the second row and 1/3 of a plank for the third row. Thereafter install planks in a random layout offsetting end joints by at least 8".* Complete each row including the cut piece at the end of the row. Always place cut ends against the wall. Clean any adhesive smears on the face of the flooring immediately with a clean wet cloth before it dries. Roll the floor with a 100 pound three section roller immediately after completing each section and while adhesive is still wet. Re-roll it again after 1 hour. Failure to roll the floor can result in poor adhesion and indentation of the finished floor.

FINISHING THE JOB

- Clean any adhesive smears on the face of the flooring immediately while wet with a clean cloth and dilute solution of neutral cleaner and water. Mineral spirits can be used to remove dried adhesive.
- Keep traffic off the newly installed floor for at least 24 hours after installation. Open to light traffic for the next 48 hours. Resume normal traffic after 72 hours.
- Protect the floor from rolling or static loads for at least 72 hours after installation to allow adhesive to set firm.
- Always use strips of hardwood or plywood when moving heavy objects such as furniture or equipment over the floor even when using carts or dollies with wheels.
- Allow adhesive to dry a minimum of 4 days before wetting or washing the new floor.

STRUCTURE, IMPACT, ENDURANCE RESIDENTIAL AND LIGHT COMMERCIAL INSTALLATION INSTRUCTIONS

These products are installed directly adhered to the subfloor surface. In residential applications only, Impact and Endurance can be installed over a Congoleum UnderFlor. Use Congoleum AD-32 Pressure Sensitive Adhesive for installations over all approved subfloor surfaces including Congoleum UnderFlor.

GENERAL INFORMATION

- Resilient flooring installation should be scheduled after all other trades have completed their work
- The HVAC systems must be in operation for at least 10 days prior to flooring installation and thereafter to maintain a constant temperature.
- It is important to maintain proper temperature at the time of installation in order to minimize thermal dimensional changes. The subfloor, all flooring material, and adhesive must be conditioned at a constant temperature between 65°F (18°C) and 85°F (29°C) for 48 hours prior to, during and 72 hours after installation. Thereafter, maintain the room temperature between 55°F (13°C) and 90°F (32°C).
- Unopen cartons of flooring should be neatly stacked in the room where they will be installed during the acclimation period. Open cartons just prior to installation.
- When using flooring from two or more cartons, make sure pattern and run numbers found on the carton are the same.
- Mix and install flooring from several different cartons to achieve a random appearance.

SUBFLOOR INFORMATION

The existing subfloor type and condition, preparation involved, cost and replacement ease, are all important considerations when selecting the best installation method for a particular job. The chart (on next page) provides a list of common subfloors and requirements for each installation method.

Subfloor Surface	When Installed over Underfloor (Residential only)	When Directly Adhered to Subfloor
Suspended Wood subfloor over joist or trusses up to 19.2" OC.	<ul style="list-style-type: none"> • Single layer Sturd-I-Floor rated panel 23/32" or heavier • Double layer construction, minimum 1" thick 	Double layer construction, minimum 1" thick with suitable underlayment panel. Do not install directly adhered over oriented strand board or particle board.
Wood Panel Underlayment	Plywood and other hardwood veneer panels, oriented strand board, NPA rated particle board. The surface must be smooth and structurally sound.	APA rated Underlayment grade plywood and other underlayment grade veneer panels that are intended for use as flooring underlayment and that carry a written warranty by the panel manufacturer.
Concrete, on, above and below grade	With vapor emissions up to 5 lbs.	With vapor emissions up to 5 lbs.
Lightweight Concrete and Gypsum Topping with a minimum 2000 psi compression rating	Preferred Method Must be smooth, dry and in sound condition. Repair all cracks, holes and damaged areas.	Must be smooth, dry and in sound condition. Repair all cracks, holes and damaged areas. Seal with a sealer/primer recommended by the topping manufacturer. A bond test is recommended. Do not install over powdery surfaces.
Radiant Heated Floors	Preferred Method	Gapping at end joints can occur with temperature fluctuations
	The temperature of the floor should be limited to 70°F (21°C) for 24 hours before, during and 48 hours after installation. There after the temperature should be raised gradually to the desired temperature. The maximum floor temperature should not exceed 85°F (29°C).	
Existing Resilient Flooring and Tile Note: Refer to warning statement below.	Must be single layer, fully adhered and in good condition. Do not install over heavy cushioned or cushioned backed flooring or tile installed below grade.	Must be single layer, fully adhered, and in good condition. Do not install over heavy cushioned or cushioned backed flooring, tile installed below grade or self adhering tile. Remove wax or polish and level embossed areas with an embossing leveler
Ceramic, Marble and Granite	Tile must be well bonded. Grind high spots and fill low areas to a smooth surface with a latex modified portland cement underlayment.	

Sand joints smooth and set fasteners 1/32" (.8 mm) below the surface. Fill underlayment joints wider than 1/32" (.8 mm). Rough, weathered or damaged subfloor panels must be sanded smooth or covered with a suitable underlayment panel. Congoleum will not assume responsibility for claims related to subfloor problems regardless of the underlayment or subfloor material used.

Concrete Floors must be clean, dry, smooth and free of dust. Level, rough or uneven surfaces, cracks and control joints with a portland cement-based patching compound. Do not install flooring over expansion joints. Moisture vapor emissions must not exceed 5 lbs. /1000 ft.²/24 hours when tested with calcium chloride test kits in accordance with ASTM F-1869 or be greater than 80% RH (relative humidity) when tested with IN Situ Probes in accordance with ASTM F 2170. Surface pH must be between 5 and 9.

Existing Resilient Floors must be single layer, fully adhered and well bonded over an approved subfloor. Remove all wax, floor finish or polish prior to installation. Use embossing leveler to level embossed floors. Do not install new flooring over loose laid or perimeter fastened floors, soft or heavily cushioned floors, cushioned backed flooring, self-adhered tile or tile installed below grade level.

Adhesive Residue must be completely removed on installations where flooring will be directly bonded to the subfloor. Refer to the Resilient Floor Covering Institute (RFCI) Recommended Work Practices for procedures involving adhesive removal. Do not use solvent or liquid adhesive removers to remove old adhesive residue. These products can have a damaging effect on the new floor and adhesive.

⚠ WARNING

Existing Resilient Flooring

WARNING: DO NOT SAND, DRY SWEEP, DRILL, SAW, BEADBLAST, OR MECHANICALLY CHIP OR PULVERIZE EXISTING RESILIENT FLOORING, BACKING, LINING FELT, ASPHALTIC "CUT-BACK" ADHESIVE, OR OTHER ADHESIVE. THESE PRODUCTS MAY CONTAIN ASBESTOS FIBERS AND/OR CRYSTALLINE SILICA. AVOID CREATING DUST. INHALATION OF SUCH DUST IS A CANCER AND RESPIRATORY TRACT HAZARD.

SUBFLOOR PREPARATION

All subfloor surfaces must be clean, dry, smooth structurally sound and free of contaminants or reagents that can interfere with adhesion or cause discoloration to the floor such as paint, wax, oil, grease, solvent, adhesive residue, curing and parting compounds, sealers and surface hardeners. All surface imperfections should be leveled with a portland cement-based latex patching compound. Gypsum-based patching compounds are not recommended. Deviations in the subfloor should not exceed 3/16" in 10' or 1/16" in 1'. Subfloor deflection should not exceed 1/360th of the span.

Wood Floors must be structurally sound and free of movement with at least 18" (46 cm) of well-ventilated air space below. An effective vapor barrier laid on the ground surface must be used in a crawl space. Do not install flooring over wood subfloors laid directly on concrete or over sleeper construction laid over concrete subfloors.

Various federal, state, and local government agencies have regulations governing the removal of in-place asbestos containing material. If you are considering the removal of a resilient floor covering structure that contains or is presumed to contain asbestos, you must review and comply with all applicable regulations. Regulations outside the United States may vary.

Copies of the Resilient Floor Covering Institute Recommended Work Practices for the Removal of Resilient Floor Coverings are available from:

Resilient Floor Covering Institute (RFCI)

115 Broad Street
Suite 201
La Grange, GA 30204
www.rfci.com

INSTALLATION RECOMMENDATIONS

Layout

When planning the layout make sure tile and plank joints fall at least 6" (15.2cm) away from joints in the underlayment and or seams in existing flooring.

Plank Installations - Snap a chalk line down the center of the floor parallel with the long dimension of the room (Fig. 1).

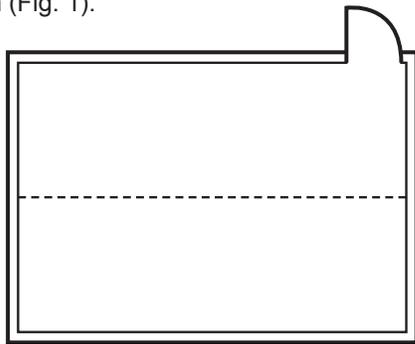


Fig. 1 - Center line

Adjust the chalk line if necessary to avoid narrow pieces at the side walls (Fig. 2).

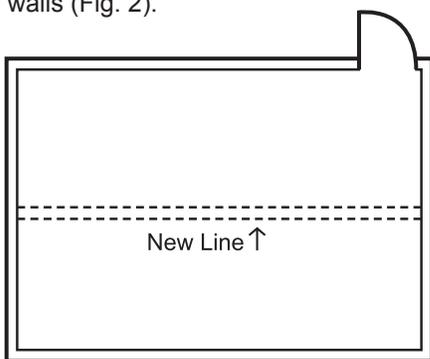


Fig. 2 - Adjust center line

Apply AD-32 Adhesive with a 1/16" x 1/32" x 1/32" notched trowel over one-half of the subfloor up to the center chalk line. Allow adhesive to dry completely to a tack, normally 30 to 60 minutes, longer in cool or humid conditions. Adhesive will turn from off white to translucent when dry.

Carefully install the first row of tile or plank along the edge of the chalk line. Start with a whole plank in the first row. Use 2/3rds of a plank to start the second row and 1/3rd of a plank for the third row. Thereafter install planks in a random layout offsetting end joints by at least 8". (Fig. 3).

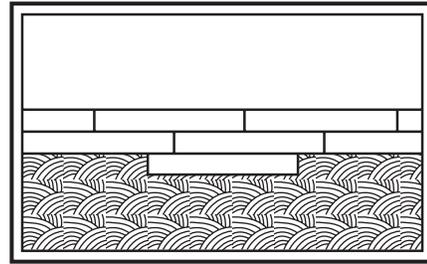


Fig. 3

Avoid using small pieces less than 6" at the wall. Always hold planks in a low angle when positioning them to ensure a tight joint. Complete each row including the cut piece at the end of the row. Always place cut ends against the wall. Complete the opposite side of the room and roll the entire floor in both directions with a 100 pound, three-section roller. Restrict to light traffic for the next 48 hours.

Tile Installations - Snap a chalk line down the center of the floor parallel with the long dimension of the room. Find the center of the chalk line and snap a second chalk line at a right angle to the center line. Adjust the chalk line if necessary to avoid narrow pieces at the side walls (Fig. 4).

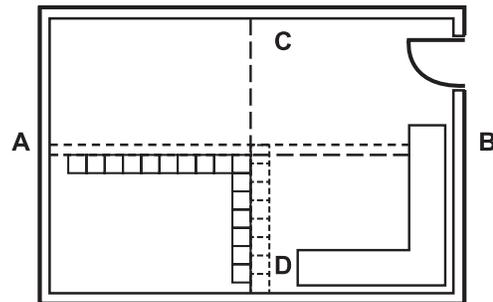


Fig. 4 - Adjust layout at center lines for larger border tiles.

18" x 36" tiles can be installed in an ashlar layout with a 9", 12" or 18" drop pattern, depending on the desired appearance. A square layout with all 4 corners lined up is not recommended. For Ashlar layouts additional chalk lines will be required to establish starting locations in each row (Fig. 5).

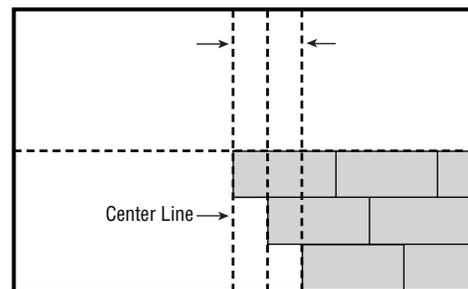


Fig. 5 - Ashlar layout starting lines.

Apply AD-32 Adhesive with a 1/16" x 1/32" x 1/32" notched trowel over one-half of the subfloor up to the center chalk line. Allow adhesive to dry completely to a tack, normally 30 to 60 minutes, longer in cool or humid conditions. Adhesive will turn from off white to translucent when dry.

Carefully position the first tile in the adhesive at the intersection of the center and perpendicular chalk lines (Fig. 6).

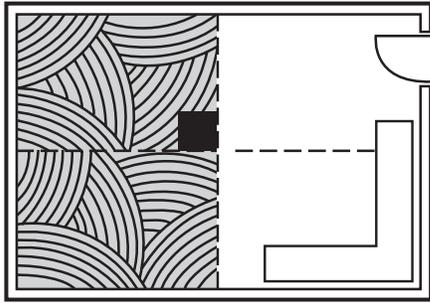


Fig. 6 - Position the first tile at the intersection.

The tile will bond instantly upon contact so it must be positioned accurately without sliding it. Press the tile firmly into the adhesive once it is in position. Install square tiles in the first quadrant along the center and perpendicular lines in a stair step fashion (Fig. 7).

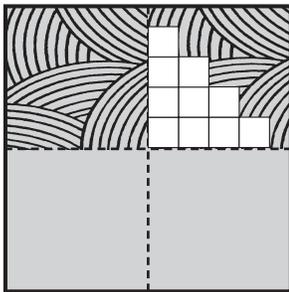


Fig. 7

Install rectangular tiles along the center line in straight rows. Complete each row, including cut pieces at the wall before proceeding to the next row (Fig. 8).

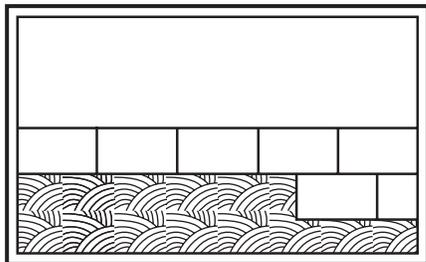


Fig. 8

Always hold the tile in a low angle when positioning it to ensure a neatly fit joint with no gaps. At the end of each row the tile will need to be cut to fit. Be sure to place cut ends toward the wall. Complete the opposite side of the room following the same procedure and roll the entire floor in both directions with a 100 pound, three-section roller. Restrict to light traffic for the next 48 hours.

CUTTING FLOORING TO FIT

The flooring will need to be cut to fit to walls and other vertical surfaces.

Straight Cuts

Place a loose piece directly over the top of the last full tile, making sure all edges are lined up. Use a whole piece as a measuring device, position one edge against the wall and mark the loose piece with a pencil along the opposite edge (Fig. 9).

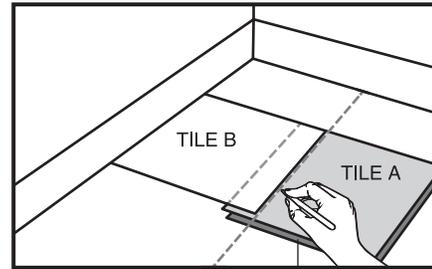


Fig. 9

Next, place the marked tile on a cutting board. Using a carpenter square as a guide, score the pencil line carefully with a sharp utility knife. Break or cut the tile along the score mark.

Irregular Cuts

Scribe the flooring to fit to irregular shapes such as door trim, pipes, etc. Cut with a utility knife.

Congoleum Underflor

Underflor provides an alternative to direct bonding to the subfloor and helps to address various subfloor challenges.

GENERAL INFORMATION

- Always roll sheets of Underflor tightly around a tube with the vinyl side out for storing and transporting. Avoid distorting Underflor.
- Condition the room and all flooring materials at a constant temperature between 65°F (18°C) and 85°F (29°C) for 48 hours prior to, during and 72 hours after installation.
- All Underflor underlayment and finished flooring must be installed with a 1/4" space around the perimeter of the room to allow for expansion and contraction of the flooring system and subfloor. Under cut door casing and slide finished flooring under for a finished appearance.
- Use AD-32 Adhesive for installing products over Underflor. Hard setting adhesives should never be used with Underflor.

UNDERFLOR INSTALLATION

Only Impact and Endurance are recommended for installation over Underflor. Install Underflor with the vinyl side down just prior to installation of finished flooring. Always install Underflor running perpendicular to the long dimension of the product. Install Underflor with joints positioned at least 4" away from the seams in the underlayment. Install planks with staggered end joints positioned at least 2" away from the seams in the Underflor (Fig. 10).

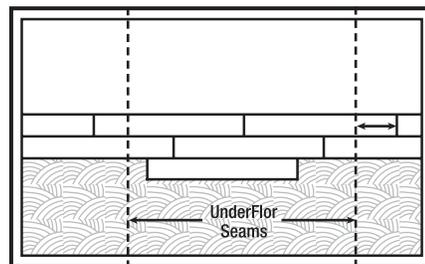


Fig. 10

Thoroughly sweep the floor to remove all loose dirt and debris. Unroll the first sheet and trim it to fit allowing a 1/4" space between the edge of the sheet and the wall.

Unroll the second sheet and position it with the seam edge butted lightly up to the first sheet.

Tape the sheets together with 2" wide clear packing tape or other thin single face plastic tape available through office supply stores and most home centers. Apply the tape, centered directly over the top of the seam edges. Roll the tape with a steel seam roller.

Suitable Packaging Tapes Include:

- Scotch 3850 Packing Tape
- Duck™ Tape Standard Packaging Tape
- Shurtape® HP Series

Do not use masking tape, fiber reinforced tape, duct tape or other thick tapes that might telegraph through the finished flooring.

Install finished flooring immediately after installing Underflor to prevent contamination that could affect the adhesive bond.

FINISHED FLOORING INSTALLATION

Establish the layout as previously described and snap center and perpendicular chalk lines as required making certain that the finished flooring joints are at least 2" away from the seams in the Underflor.

Spread AD-32 Adhesive using a 1/16" x 1/32" x 1/32" notched trowel over one-half the floor up to the center line. Do not apply excess adhesive. Allow adhesive to dry completely to a tack, normally 45 to 60 minutes, before installing flooring. Adhesive will turn from off-white to translucent when ready.

When installing flooring over UnderFlor, slight growth (buckles) may occur immediately after adhesive application. This is normal and will not affect the finished flooring installation.

Install flooring following installation instructions as previously outlined for direct bond installation. Remember to allow a 1/4" expansion space around the perimeter of the room. If necessary to adjust or remove a tile or plank, use a heat gun to warm it up first. Complete the opposite side of the room following the same procedure.

IMMEDIATELY AFTER INSTALLATION

Replace the base moldings and return appliances and furniture to the room by rolling or sliding them over strips of hardboard.

When installing over UnderFlor, all finish trim and transition moldings must be installed so they do not bind or restrict the finished flooring from moving when expansion and contraction occurs during seasonal changes. Fasten the trim to the wall not to the subfloor. Do not drive fasteners into the floor or underlayment.

Seal all areas that may be exposed to surface spills, i.e. tubs, toilet and showers with a high quality acrylic caulking.

REPAIRS

To replace a damaged plank follow the procedures below:

- Using a sharp utility knife cut through a corner of the damaged plank taking care not to cut into the adjacent plank or into the Underflor below.
- Warm the plank with a heat gun.
- Lift the end of the plank and continue heating.
- As you provide sufficient heat, the plank will release from the adhesive.
- Lift out the entire plank and warm the exposed adhesive.
- Install the new plank.
- Set the new plank firmly into place and roll with a hand roller.
- Normal activity can resume immediately after completing the repair.

IMPACT SMARTLOCK INSTALLATION INSTRUCTIONS

Impact SmartLock Luxury Vinyl Plank Flooring with Interlocking Joints is part of the Timeless by Congoleum collection. Impact SmartLock is constructed with a patented interlocking joints that locks the plank together to form a tight, durable, water proof joint. Impact SmartLock is installed as a floating floor so no adhesive is required.

GENERAL INFORMATION

- Impact SmartLock is recommended for residential interior use in enclosed rooms with continuously maintained temperatures ranging between 65°F and 85°F. Do not install flooring in areas where wide temperature fluctuations can occur or over sloped floors, ramps or in wet areas
- Handle cartons and plank flooring carefully to protect the locking edge profile. Always store and transport cartons neatly stacked on a smooth, flat, solid surface. Do not stack more than 10 cartons high.
- Acclimate the flooring and room(s) at a constant temperature between 65°F and 85°F for 48 hours prior to, during and continuously after installation.
- Mix planks from several different cartons to ensure a random appearance.
- Always allow a 1/4" expansion space around the entire perimeter of the room, at all base cabinets, fixtures and pipes. Cover the exposed edges with trim or fill the gap with a high quality acrylic caulking.
- All base cabinets must be installed prior to installing flooring. Do not install base cabinets or island cabinets on top of the floor.
- In a large single room with a length of 40 feet and a width greater than 25 feet, the addition of T-molding expansion joints will be required. When transitioning from an adjacent area into another room (i.e. a hallway into a bedroom) maintain adequate expansion in the doorways by using T-moldings and undercutting the door casings.

- **Protect Impact SmartLock finished installations from prolonged exposure to direct sunlight. Close curtains or blinds where extreme sunlight hits the floor. Prolonged direct sunlight can result in fading and discoloration. Excessive surface temperatures can cause floor expansion that may result in buckling or delamination.**

PREPARING THE AREA

- Remove all furniture and appliances from the room(s).
- Remove wall and doorway trim
- Always undercut wood door casings

SUBFLOOR RECOMMENDATIONS

Impact SmartLock can be installed over a variety of subfloor surfaces including concrete on all grade levels, wood subfloors and many existing hard surface floors. The subfloors must be clean, smooth, flat, solid and dry. Do not install planks over floors that are sloped for drainage or uneven floors where deviations are greater than 3/16" in 10' or 1/16" in 1'. Subfloor deflection should not exceed 1/360th of the span. Uneven or wavy floors must be leveled with portland cement based patching compound.

WOOD SUBFLOORS

Impact SmartLock is suitable for installation over double layer wood subfloors a minimum of 1" thick. Single layer subfloors constructed with APA rated Sturd-I-Floor panels, 23/32" or heavier should be covered with a minimum 1/4" underlayment. Joist spacing should not exceed 19.2". Set fasteners 1/32" below the subfloor surface, sand joints smooth and fill holes and gaps wider than 1/8" wide. Install suitable underlayment when necessary to achieve a flat or solid surface. Impact SmartLock can be installed over underlayment grade plywood, lauan plywood and other underlayments that are recommended by the panel manufacturer for use with vinyl flooring.

CONCRETE SUBFLOORS

Impact SmartLock can be installed over concrete on all grade levels. Moisture vapor emissions should not exceed 5 lbs./24 hour per 1,000 sq. when tested with the Anhydrous Calcium Chloride Test in accordance with ASTM F 1869 or 80% RH in accordance with ASTM F 2170 "Standard Test Method for Determining Relative Humidity in Concrete Slabs using in situ Probes".

Fill cracks; saw cuts and control joints and level wavy floors or uneven areas that exceed 3/16" in 10' or 1/16" in 1'. Do not install flooring over expansion joints.

RADIANT HEATED SYSTEMS

Impact SmartLock can be installed over in-floor radiant heating systems provided the subfloor surface does not exceed 85°F at any point. The initial floor temperature should not exceed 70°F for 24 hours prior to and 48 hours after installation. Thereafter the temperature should be gradually increased to the desire setting up to 85°F. Radiant heating systems that are installed on top of the subfloor surface must be covered with a minimum 3/4" concrete topping.

EXISTING FLOORING

Impact SmartLock can be installed over a variety of finished floors including single layer resilient sheet floor and tile, ceramic, marble and terrazzo. The surface must be in good condition with no indication of excessive moisture or moisture damage. Level deep or wide grout lines with embossing leveler. Do not install flooring over heavy cushioned floors, cushioned backed floors or over tile installed over concrete below grade level.

The grout joints in ceramic tile and marble must be leveled so they are flush with the tile surface. Additionally the tile may require several skim coats to achieve a flat surface.

ASBESTOS WARNING

WARNING: DO NOT SAND, DRY SWEEP, DRILL, SAW, BEADBLAST, OR MECHANICALLY CHIP OR PULVERIZE EXISTING RESILIENT FLOORING, BACKING, LINING FELT, ASPHALTIC "CUT-BACK" ADHESIVE, OR OTHER ADHESIVE. THESE PRODUCTS MAY CONTAIN ASBESTOS FIBERS AND/OR CRYSTALLINE SILICA. AVOID CREATING DUST. INHALATION OF SUCH DUST IS A CANCER AND RESPIRATORY TRACT HAZARD.

INSTALLATION

For best appearance planks should be installed parallel to the long dimension of the room and preferably parallel with outside light sources i.e. windows and doors.

Measure the width of the room and snap a chalk line down the center of the floor. Determine the width of the plank in the last row either through measurements or dry layouts. If smaller than one-half of the plank width, adjust the chalk line in either direction one-half of the plank width to achieve larger cut planks at the side walls. Snap a second chalk line by measuring from the center line over toward the starting wall. Use a multiple of the plank width to establish the starting line for the first rows of planks.

Start the installation in the left hand corner of the room with the edge of the plank accurately positioned at the chalk line and with the tongue side and end toward the starting wall. If necessary trim the plank to fit to the wall allowing a 1/4" expansion space. If starting the first row with a whole plank width it will be necessary to trim the tongue off against the wall. Always place the cut edge against the wall.

To trim planks use a utility knife and a straight edge. Score the top surface of the plank and flex it downward to separate the pieces.

Attach the end joints of the planks in the first row by inserting the tongue into the groove while holding the plank at a 10° to 15° angle to the floor. Apply light pressure inward and down until the planks lock together (Fig. 1). Use spacers in the first row between the edge and end of the planks and the wall to maintain a 1/4" expansion space.

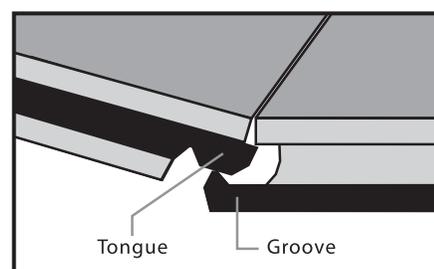


Fig. 1

Start the second row using 1/3rd of a plank (Fig. 2).

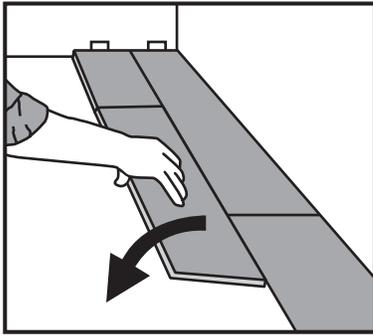


Fig. 2

Place the cut end against the wall. Insert the tongue on the long side of the plank into the groove of the plank in the first row. Hold the plank in a 10° to 15° angle while applying light pressure inward and down until they lock together. To complete the second and all successive rows it will be necessary to lock the short end into the previous plank first before locking the long side of the plank. Angle the plank and push the tongue into the groove until the tongue locks into place. It may be necessary to lift both planks slightly to lock the long joint together. Complete the second row allowing a 1/4" expansion space at the end of the row.

Start the third row using 2/3rds of a plank with the cut end against the wall. Complete each row thereafter using a random layout with end joints off-set by at least 8". Plan the layout to avoid using small planks (less than 6") at the walls. The cut piece at the end of the row can often be used to start the next row provided it achieves a random layout. Always place the cut end against the wall and allow a 1/4" expansion space.

Impact SmartLock is unique in that it can be installed easily when working forward (placing the tongue in to the groove) or backward (placing the groove in to the tongue).

This allows for easy fitting around door trim and changing direction to go into alcoves or adjoining rooms. SmartLock can also be assembled by using a pull bar or tapping block in difficult areas such as the last row and when fitting around door trim. Use a pull bar to lock the joints together in the last row (Fig. 3).

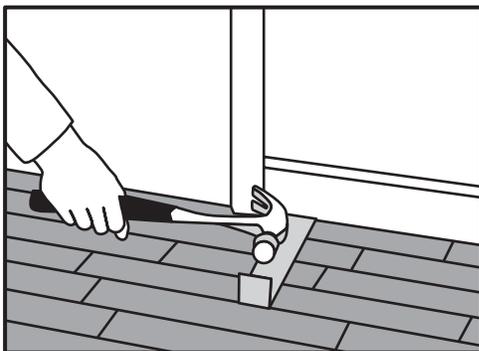


Fig. 3

Always use a pull bar on the cut edge of the plank. Factory edges can be damaged if the pull bar is used directly against them.

When fitting around door trim it will be necessary to slide the plank under the trim. This can be accomplished by starting the row on the side of the room with the door trim and then sliding the plank into place once it is attached. The row can be completed by inserting the tongue in to the groove or the groove into the tongue depending on the direction. A tapping block can also be used to lock the joints together while the planks are in a flat position. Use a piece of scrap flooring with the corresponding joint male or female and a series of light taps until the joint is gradually locked together. Do not hit the edge directly or use excessive force as it could damage the edge of the plank.

SPECIAL INSTRUCTIONS

Bathrooms

When Impact SmartLock is installed in a bathroom the flooring can be laid under the toilet provided that the floor is separated from adjacent rooms with a doorway threshold or transition molding. Otherwise the flooring should be fit around the toilet leaving a 1/8" expansion space. Use a high quality acrylic caulking to fill the expansion space at the toilet, bathtub, shower and all wet areas to prevent surface water from seeping under the floor.

Stairs

Impact SmartLock can be installed fully adhered over steps using AD-32 Adhesive. Follow the instruction on the adhesive for trowel size and drying time. Always use a flush stair nose molding to finish each step at the nose.

Finishing the Job

Remove all spacers. Install door and wall trim so they do not pin or restrict the floor from moving. Do not install trim tight to the floor. Drive fasteners into the wall and not the floor. When installing doorway transition moldings allow a 1/4" expansion space between the edge of the floor and the molding fasteners. Do not drive fasteners in to the floor.

Return appliances to the room by rolling or sliding over strips of hardboard to prevent damaging the floor.

REPAIRS

Impact SmartLock is a tough, durable floor however if a plank becomes damaged it can be replaced.

Damaged planks along the wall can be replaced by unlocking the planks in that area and then re-installing them after the replacement plank is installed. Follow the instructions below for replacing a plank in the body of the floor.

- Use a straight edge and utility knife to make a cut down the center of the damaged plank to within 2" of the ends.
- Make diagonal cuts from the corner of the plank back to the center cut.



Fig. 4

- Remove the damaged plank by lifting the edge of each piece until it unlocks.
- Prepare the replacement plank by removing the bottom of the groove along the long and short side. Check the replacement piece by laying it into place. The plank should fit neatly into place with out gaps at the joints. Remove the plank.

- Before completing the repair, place a 2" wide strip of wax paper under the centered under the edge of the tongue on the long and short side. This will prevent adhesive from bonding the plank to the subfloor.
- Next apply a 1/8" bead of Loctite Power Grab clear heavy duty construction adhesive to the exposed groove along the long and short end of the surrounding planks. Do not use excess adhesive.
- Immediately while adhesive is wet install the replacement plank by inserting the tongue into the groove along the long side. Use a tapping block to lock the short end and then drop the plank into position. Remove excess adhesive from the surface and roll the edges with a steel hand roller. Clean the surface immediately with a clean cloth and mild detergent to remove any adhesive residue. Then dry with a clean soft cloth. Note, adhesive and adhesive film is not removable if allowed to dry on the surface of the floor. Apply weight to the adhered edges for 20 to 30 minutes.
- Keep traffic off the repair for 12 hours.

ENDURANCE SMARTLINK INSTALLATION INSTRUCTIONS

Endurance SmartLink Plank is a floating flooring system that utilizes an attached adhesive strip to connect the planks together. No additional adhesive is required. You simply connect the planks together by pressing the edges into the adhesive strip. The planks bond to each other, not to the floor.

GENERAL INFORMATION

- Endurance SmartLink is recommended for installation in enclosed heated areas where HVAC has been in operation for at least 10 days. Do not install Endurance SmartLink on ramps or in rooms with sloping floors or floor drains.
- Always handle, store and transport Endurance SmartLink carefully to prevent distortions. Store and transport cartons on a flat surface in neat stacks no more than 10 cartons high. Store cartons flat, never on the end or side.
- The subfloor and all flooring material must be conditioned at a constant temperature between 65°F (18°C) and 85°F (29°C) for 48 hours prior to, during and 72 hours after installation. Thereafter, maintain a room temperature between 55°F (13°C) and 85°F (29°C).
- Endurance SmartLink is a floating floor. Allow 1/4" space for expansion between the planks and all vertical surfaces. Cover the space with trim. Do not install base cabinets on top of Endurance SmartLink.
- In a large single room with a length of 40 feet and a width greater than 25 feet, the addition of T-molding expansion joints will be required. When transitioning from an adjacent area into another room (i.e. a hallway into a bedroom) maintain adequate expansion in the doorways by using T-moldings and undercutting the door casings.
- Do not install Endurance SmartLink in a dusty environment or remove the paper liner from the adhesive strip until ready to be covered with a plank.

Subfloor Surface	Specification
Wood subfloor suspended over joist or trusses up to 19.2" OC	<ul style="list-style-type: none"> • Single layer Sturd-I-Floor rated panel 23/32" or heavier • Double layer construction, minimum 1" thick • Minimum of 18" of well ventilated air space below structural supports
Wood Underlayments	Plywood, other hardwood veneer panels, particleboard, OSB - Sand joints smooth and set fasteners 1/32" below the surface. Do not install over weathered or rough underlayment.
Concrete, on, above and below grade	With vapor emissions 5 lbs. or less. Do not install over expansion joints.
Lightweight Concrete and Gypsum Topping	Minimum 2000 psi compression rating. Must be smooth, dry and in sound condition. Repair all cracks and damaged areas.
Radiant Heated Floors	The temperature of the floor should be limited to 70°F (21°C) for 24 hours before, during and 48 hours after installation. Thereafter the maximum floor temperature should not exceed 85°F (29°C).
Existing Resilient Flooring and Tile Note: Refer to warning statement below.	Must be single layer, fully adhered and in good condition. Do not install over heavy cushioned or cushioned backed flooring or tile installed below grade. Heavily embossed floors should be leveled with embossing leveler.
Ceramic, Marble and Terrazzo	Must be well bonded. Grind high spots and fill low areas to a smooth surface with a latex modified portland cement underlayment to achieve a flat surface.

- **Protect Impact SmartLock finished installations from prolonged exposure to direct sunlight. Close curtains or blinds where extreme sunlight hits the floor. Prolonged direct sunlight can result in fading and discoloration. Excessive surface temperatures can cause floor expansion that may result in buckling or delamination.**

Preparing the Area

- Move all furniture, appliances, and fixtures from the room.
- Remove all binding strips or other restrictive molding from doorways, walls, etc.
- Undercut wood door casing so that the flooring can be slid under it.

SUBFLOOR REQUIREMENTS

Endurance SmartLink Plank can be installed directly over a variety of subfloor surfaces. All subfloor surfaces must be clean, dry, smooth and free of movement. In remodel applications remove all adhesive residue or other substances that can prevent the floor from floating. Deviations in the subfloor should not exceed 3/16" in 10' or 1/16" in 1'. Subfloor deflection should not exceed 1/360th of the span. Set nails and fasteners 1/32" below the surface.

Fill depressions wider than 1/8" with a portland cement-based latex patching compound.

⚠ WARNING: DO NOT SAND, DRY SWEEP, DRILL, SAW, BEADBLAST, OR MECHANICALLY CHIP OR PULVERIZE EXISTING RESILIENT FLOORING, BACKING, LINING FELT, ASPHALTIC "CUT-BACK" ADHESIVE, OR OTHER ADHESIVE.

These products may contain asbestos fibers and/or crystalline silica. Avoid creating dust. Inhalation of such dust is a cancer and respiratory tract hazard.

Various federal, state, and local government agencies have regulations governing the removal of in-place asbestos containing material. If you are considering the removal of a resilient floor covering structure that contains or is presumed to contain asbestos, you must review and comply with all applicable regulations. Regulations outside the United States may vary.

Copies of the Resilient Floor Covering Institute Recommended Work Practices for the Removal of Resilient Floor Coverings are available from:

Resilient Floor Covering Institute (RFCI)

115 Broad Street • Suite 201
La Grange, GA 30204 • www.rfci.com

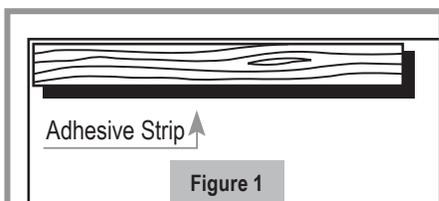
Layout – Determine the direction that planks will be installed in the room. Normally the long direction of the plank will be installed parallel with the long direction of the room. To balance the flooring in the room, mark the center of the floor. Measure the distance from the mark to the wall. Divide this measurement by the plank width (6"). If the remainder is less than half a plank width (3"), then add 3" to the remainder to determine the width of the plank in the first row.

Example: Room width 12'-2" or 6'-1" on each side of the center mark 6'-1" (73") divided by 6" equal 12 with a remainder of 1". Since 1" is less than one half of the plank width, add 3" to the remainder for a starting plank width of 4".

Note: Check to make sure that the joints in the finished floor offset joints in the underlayment by at least 2". Adjust the layout if necessary.

Installation – Note: The first row of planks can be secured to the subfloor with a strip of thin double face tape to prevent it from moving during installation. Use a string or chalk line to make sure the first row is straight before the planks are secured to the tape.

Lay the first row of planks along the wall starting in the left corner with the adhesive strips facing out away from the walls (Fig. 1).



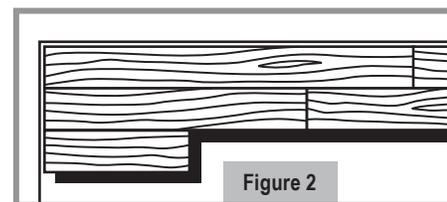
Allow a 1/4" space between the edge of the planks and the wall, base cabinets and any other vertical surfaces. Remove the paper liner from the adhesive strip at the end of the first plank and secure the end of the next plank by pressing down on the planks.

Caution: The paper liner is slippery. Place it into the trash immediately after it is removed from the adhesive strip to avoid a slip hazard. Protect the exposed adhesive strip from dust and foot traffic.

Do not remove the paper liner until you are ready to cover the adhesive strip with another plank. Continue to install the planks in the first row including the cut piece at the end of the row.

Lay the second row starting in the left corner with a plank cut 2/3 the length or about 24" (Fig. 2). Place the cut end against the wall. The piece you cut off can be used at the other end of the row if the layout permits. Remove the paper liner from the installed plank in the first row and place it in the trash. Lay the plank by holding one end up while slowly positioning the other end and edge into the adhesive strip against the previous laid planks to achieve a tight joint. Do not slide planks together. If adjustments are required, lift the plank off the adhesive strip and reposition it. Complete the second row including the cut piece at the end of the row. Use a hand roller to secure the plank in the adhesive strip and level the joints.

Start the third row with a plank cut to 1/3 the length; about 12" (Fig. 2).



Thereafter maintain a random layout with end joints staggered by at least 8". Always put the cut end against the wall. Plan the layout to avoid using small pieces (less than 6") at the ends of the row.

Once you have completed 3 or 4 rows, it is easier to work from on top of the installed plank. Continue to install the planks by laying each plank in place without sliding it. Make sure the joints are laid together tight; if necessary, lift the plank and re-position it to close any open joints.

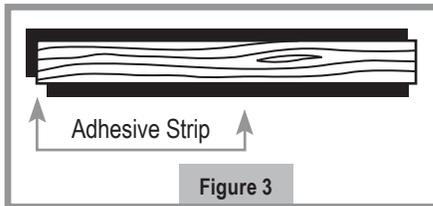
After completing the installation roll the entire floor in both directions with a 100 pound three section roller. Use a hand roller to secure the edges and ends in the adhesive strip and level the joints.

Cutting – Cut planks with a sharp utility knife and straight edge or square.

Measure the space between the last whole plank and the wall and subtract 1/4". Mark the plank and place it over a cutting board. Carefully score the top surface of the plank, release liner and adhesive strip where it will be cut. Bend the plank at the score mark until it breaks. Cut the tape on the bottom side at the score mark to separate the pieces. Install the plank with the cut end against the wall. For more intricate cuts make a paper template of the area and transfer it to the plank.

Caution: Use extreme caution when using a knife to avoid injury. Always keep fingers and hands away from the cutting path. Keep children and pets away from the work area.

Intricate Room Layouts – Some installations with multiple rooms, closets, intricate layouts or alcoves may **require changing the direction of the planks**. This can easily be done by removing the adhesive strips from a plank and placing them along the edge and end of the plank where the direction will change. Carefully position the adhesive strip centered along the edge and end of the plank without overlapping the strips. When done correctly, the plank(s) will have an adhesive strip on both sides and one end (Fig. 3).



Continue to install planks in the opposite direction as required.

Bathrooms

Only when the bathroom is installed as a separate room can the toilet be set on the planks. Always fill the gap around the entire perimeter and at fixtures with a high quality acrylic or silicone caulking to prevent water from seeping under the floor. Caulking should be used even when the perimeter will be covered with trim.

Repairs

Small chips or gouges can often be repaired by filling the damaged area with a matching wax stick that is available in most home centers or Testors® model paint available in craft stores. If damage is more extensive, a plank can be removed and replaced easily. To replace a damaged plank follow the procedures below:

- Using a sharp utility knife cut through a corner of the damaged plank taking care not to cut into the adjacent planks.
- Use a putty knife and hammer if necessary to lift the corner of the plank.
- After the corner is removed, carefully lift the plank off the adhesive strip. Use one hand to lift the plank and the other to hold the floor down. If necessary, use a heat gun to heat the plank along the edges over the adhesive strip. This will allow it to release more easily.
- Remove the adhesive strips from the replacement plank.
- Install the replacement plank starting in the corner and working toward the opposite end.
- Roll the replacement plank with a steel hand roller to seat it into the adhesive and level the edges.

IMMEDIATELY AFTER INSTALLATION

- Install wall trim around the entire perimeter to cover the 1/4" expansion space. Place trim lightly over the floor and secure it to the wall or cabinets, not to the floor. Install doorway transition moldings. Do not pin the floor with the molding or drive fasteners through the floor.
- Seal the edge with a high quality acrylic or silicone caulking in wet areas to prevent water from seeping under the floor.
- Return appliances and furniture to the room by rolling or sliding them over strips of plywood or hardboard. Install protective felt pads on chairs and other movable furniture.

Congoleum®
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