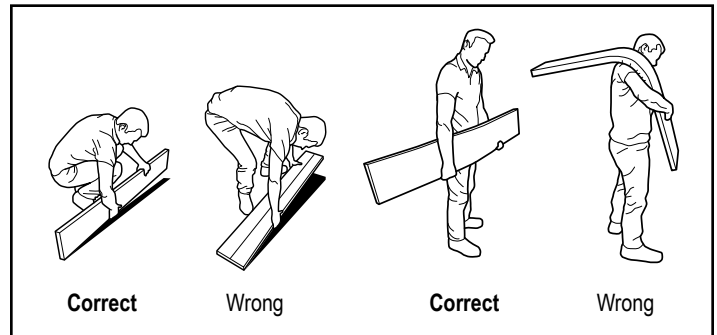




RESIDENTIAL INSTALLATION INSTRUCTIONS

CLEO Residential Luxury Flooring consists of tile and plank formats that are installed either directly adhered to the subfloor surface or as a floating floor over UnderFlor underlayment. Additionally it can be installed over a variety of wall surfaces in many applications. See detailed instructions in this guide. CLEO can be installed edge-to-edge or with grout. For the most realistic visual appearance, we recommend that all tile and stone designs be grouted. Wood planks can also be grouted for a more dramatic look. All of the CLEO designs can also be installed without grout depending upon your design preference. Use DS100 Pressure Sensitive Adhesive for installation over UnderFlor and all approved subfloor surfaces.

- Always use correct safety practices when lifting and carrying cartons of CLEO.



PRODUCT	SIZE	PIECES/CARTON	SQ. FT./CARTON
PLANKS	7" x 48"	10	23.3
	9" x 60"	8	30
12" x 24" TILE*	12" x 24" nominal 11.8125" x 23.75" actual	12	23.4
24" x 24" TILE*	24" x 24" nominal 23.75" x 23.75" actual	8	31.3

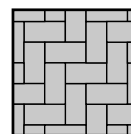
* Tile sizes have been adjusted to allow for custom layouts with a 1/8" grout joint

GENERAL INFORMATION

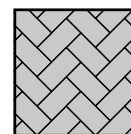
- Flooring installation should be scheduled after all other trades have completed their work.
- The HVAC systems must be in operation for at least 10 days prior to flooring installation and thereafter to maintain a constant temperature.
- It is important to maintain proper temperature at the time of 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 48 hours after installation. Thereafter, maintain the room temperature between 55°F (13°C) and 90°F (32°C).
- Un-open cartons of flooring should be neatly stacked in the room (maximum 10 cartons high) where they will be installed during the acclimation period. Avoid placing cartons in direct sunlight during acclimation. Open cartons just prior to installation.

- Install base cabinets, island cabinets and vanities prior flooring installation when installing flooring in a floating application over UnderFlor. Do not install cabinets over the floating floor as it will restrict movement.
- When using flooring from two or more cartons, make sure pattern and run numbers found on the carton are the same.
- Install flooring from several different cartons to achieve a random appearance. Some patterns have up to 60 distinctly different planks or tiles to provide a non-repetitive visual. Install flooring to achieve a balance of color without clusters of similar planks or tiles.
- When installing flooring edge to edge lay each piece net at the joints and room perimeter without excessive tightness

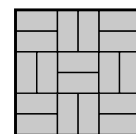
TILE LAYOUT EXAMPLES



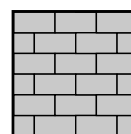
Herringbone 90°



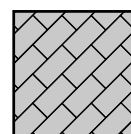
Herringbone 45°



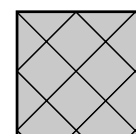
Basket Weave



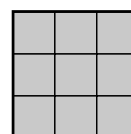
1/2 Drop



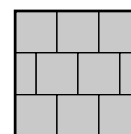
1/2 Drop 45°



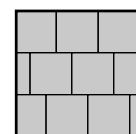
Diamond



Square



1/2 Drop



1/3 Drop

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 below provides a list of common subfloors and requirements for floating and adhered installation methods.

Subfloor Surface	When Installed over UnderFlor (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	When tested with the Anhydrous Calcium Chloride test vapor emissions up to 7 pounds.	When tested with the Anhydrous Calcium Chloride test vapor emissions up to 5 pounds
Lightweight Concrete and Gypsum Topping with a minimum 3000 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 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	Use UnderFlor 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 85F(29C).	
Existing Resilient Flooring and Tile <i>Note: Refer to black box warning statement below.</i>	Must be single layer of flooring, 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, flat surface with a latex modified portland cement underlayment	
Acoustical Underlayment	Legget and Platt Tred-Mor Acoustical Underlayment is the only approved acoustical underlayment. A single or double glue method is recommended.	

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 on floors that are directly bonded to the subfloor only. Floating installations over

UnderFlor can be installed over paint, dry adhesive residue, wax, curing and parting compounds, sealers and surface hardeners. Regardless of the installation method, all surface imperfections should be leveled with a portland cement-based latex patching compound. Gypsum-based patching compounds are not recommended.

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.

Sand joints smooth and set fasteners 1/32" (.8 mm) below the surface. Fill joints wider than 1/32" (.8 mm) on floors that are directly bonded to the subfloor or over 1/8" on floating floors installed over UnderFlor. Rough, weathered or damaged subfloor panels must be sanded smooth or covered with a suitable underlayment panel.

CLEO 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 hrs. when tested with anhydrous 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: 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
 115 Broad Street
 Suite 201
 LaGrange GA. 30240
www.rfci.com

INSTALLATION RECOMMENDATIONS

Layout

When planning the flooring 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. The flooring layout should always be considered first when installing new underlayment to ensure seam placement will not interfere with the desired floor layout.

Tile Installations

Tiles can be installed grouted or un-grouted using the traditional edge to edge fit.

Grouted floor tiles installed in a straight or diagonal pattern are laid with a 1/16" to 1/4" space at the joint depending on the desired grout line width. Tiles sizes have been adjusted to allow for a 1/8" grout joint on some custom patterns. Other custom patterns will require the traditional edge to edge (un-grouted) fit to maintain alignment. Refer to the chart below for grouting recommendations.

LAYOUT	12" x 24" TILE	24" x 24" TILE
Square	Grouted or un-grouted	Grouted or un-grouted
1/2 Drop	Grouted or un-grouted	Grouted or un-grouted
1/3 Drop	Grouted or un-grouted	Grouted or un-grouted
Diagonal	Grouted or un-grouted	Grouted or un-grouted
Herringbone (45° or 90°)	1/8" grout joint only	N/A
Basket Weave	1/8" grout joint only	N/A
Combination Basket Weave	1/8" grout joint only	1/8" grout joint only

Un-grouted floor tiles are laid with no space at the joints.

Square Layout

The square layout is used for *Square*, *Drop*, and *Basket Weave* patterns.

- Snap a chalk line down the center of the floor parallel with the long dimension of the room (Fig. 1 - "A").
- Find the center of the chalk line and snap a second chalk line at a right angle to the center line (Fig. 1 - "B").

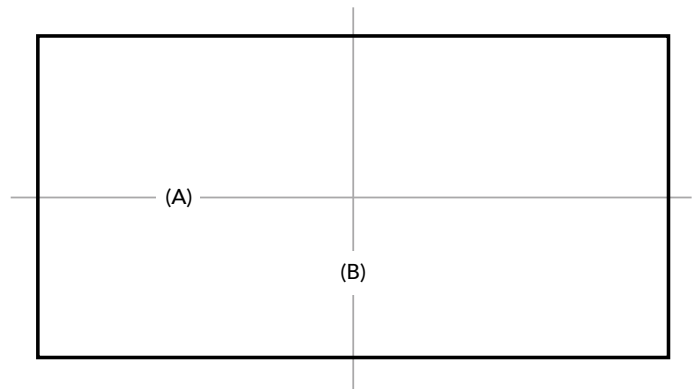


FIGURE 1 Snap a chalk line in the center of the room

- Do a dry layout of the tiles (Fig. 2A).
- Adjust the chalk lines if necessary to avoid narrow pieces at the side walls (Fig. 2B).

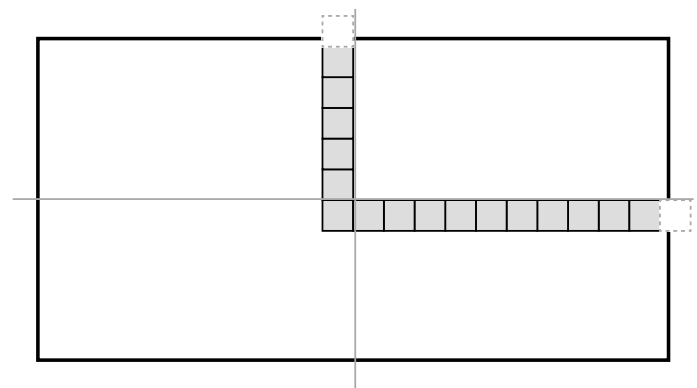


FIGURE 2A Dry lay out tiles to avoid narrow pieces at the ends

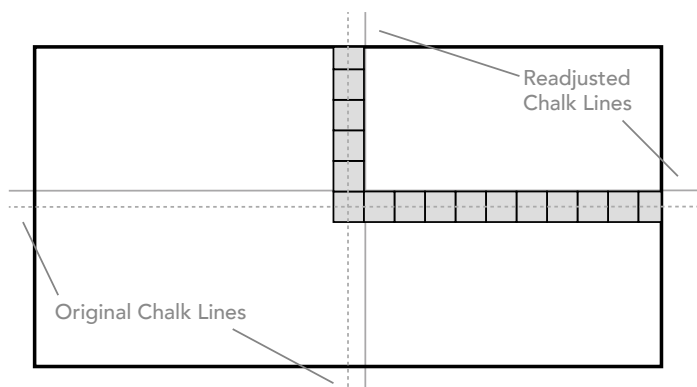


FIGURE 2B Adjust the layout to eliminate narrow pieces at the ends

1/2 Drop and 1/3 Drop Layout

Start with the square layout and make the adjustments if necessary to avoid narrow pieces at side walls. Drop layouts will require additional chalk lines to establish starting locations in each row. For 1/2 Drop layouts divide the length of the tile by 2 (example: 24" ÷ 2 = 12"). Snap a new chalk line 12" away from the perpendicular chalk line to establish the second starting location (Fig 3).

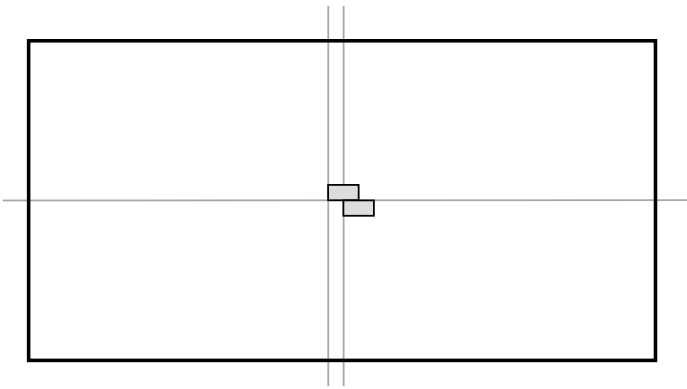


FIGURE 3 Chalk lines for a 1/2 Drop pattern

For 1/3 Drop layouts divide the length of the tile by 3 (example $24" \div 3 = 8"$). Snap a new chalk line at 8" and 16" away from the perpendicular chalk line to establish the second and third starting locations (Fig 4). Always complete a dry layout or measure to check the size of the last tile in each row. Adjust chalk lines if necessary to avoid short pieces at end walls.

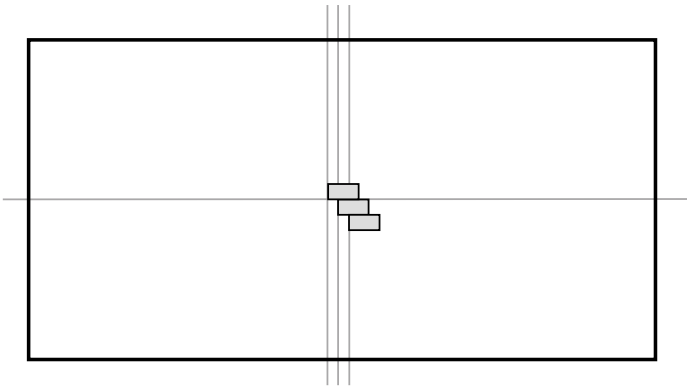


FIGURE 4 Chalk lines for a 1/3 Drop pattern

Diagonal Layout

Diagonal layouts are used for all patterns laid on a 45 degree angle including Herringbone 45°.

Start by laying out the center and perpendicular lines as described in Square Layout. Place a mark on each line an equal distance away from the center point (Fig 5A).

Use a slightly larger arbitrary dimension and mark an arc outward on either side of the centerline (Fig 5B).

Mark out two arcs from each of the other three remaining points (Fig 5C). Snap diagonal chalk lines at the point where the marks intersect (Fig 5D). If done correctly, the chalk lines will intersect at the center point.

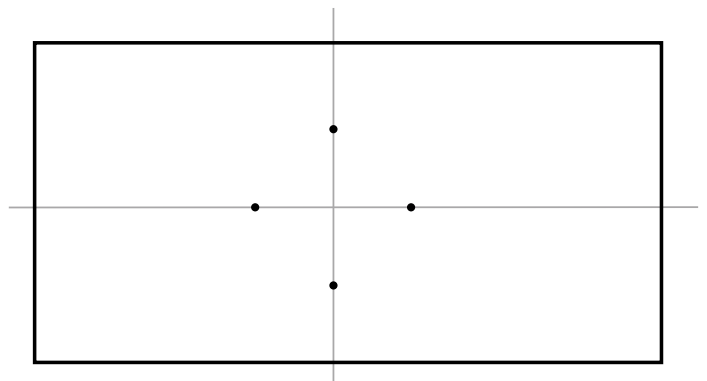


FIGURE 5A Mark four points the same distance from center of the room

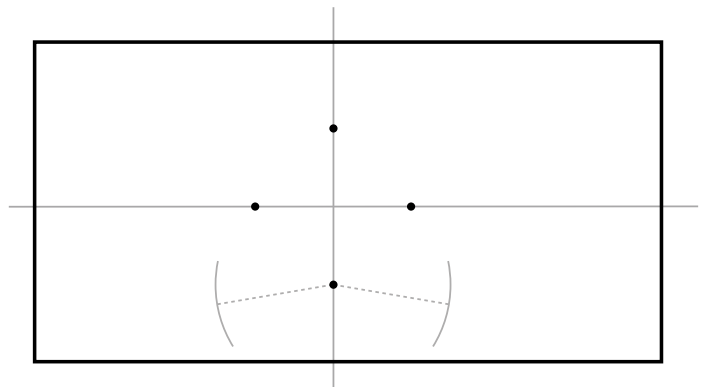


FIGURE 5B Mark two arcs from one point

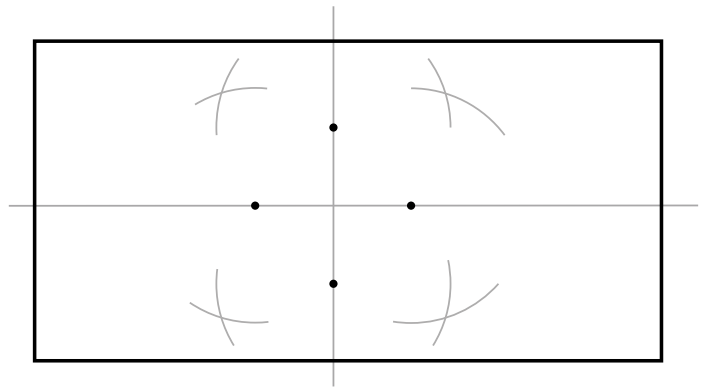


FIGURE 5C Mark two arcs from each of the other points

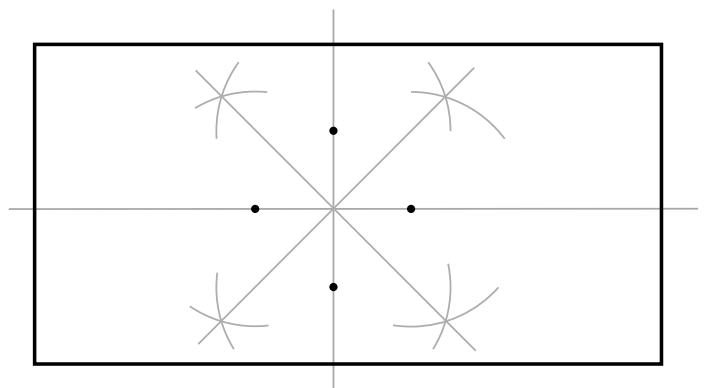


FIGURE 5D Snap diagonal chalk lines where the arcs intersect with the center

Make a dry layout in one quadrant along the center and perpendicular chalk lines (*Fig 6*).

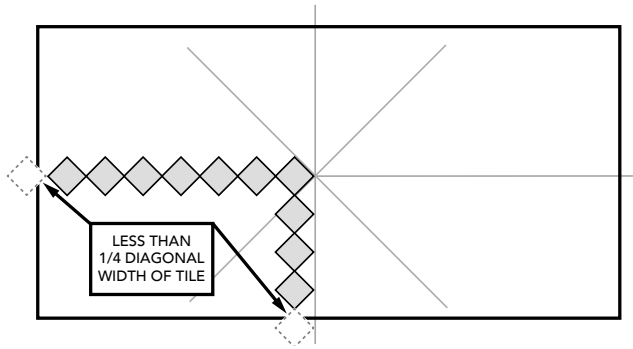


FIGURE 6 Dry lay out along one quadrant of the floor

Measure the distance between the last whole tile and the wall. If the distance in either row is less than one-fourth of the diagonal dimension of the tile, adjust the starting point and snap a new chalk line 1/4 of the diagonal dimension of the tile away from the original chalk line (*Fig 7*). This will provide a balanced layout with larger cut tiles around the perimeter.

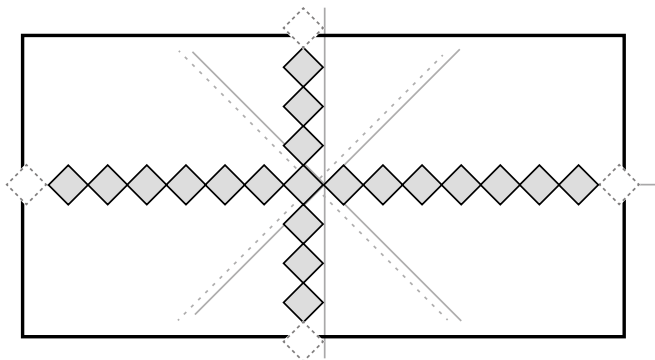


FIGURE 7 Snap new chalk lines for better balance

Herringbone Layout

The Herringbone pattern can be laid on a 45° or 90° angle depending on the desired appearance. The 12" x 24" tiles have been sized to allow for a 1/8" grout joint only. Do not install a Herringbone pattern using other grout joint widths or by the ungrouted, traditional edge-to-edge method.

Herringbone 90°

Follow the steps outlined for a square layout with a center and perpendicular chalk line. Complete a dry layout starting at the intersection of the chalk lines to determine the size of the cut border tiles. If the border tile is less than 6" adjust the chalk line 6" in either direction to avoid narrow cut tiles.

Herringbone 45°

Follow the steps outlined for a diagonal layout. Complete a dry layout starting at the intersection of the chalk lines to determine the size of the cut border tiles. If the border tile is less than 3" adjust the chalk line 3" in either direction to avoid narrow cut tiles.

TIP: Spread adhesive in three quadrants (starting quadrant and adjacent quadrants) when installing a Herringbone pattern

INSTALLING BORDERS AND INSETS

Borders can be created easily by using an accent color or different size tile. Plan the layout to allow for a uniform border size using full size tile in the field if possible. When using a square border with a diagonal layout it will be necessary to prepare the cut edge of the diagonal tile where it meets the border. This is done cold or by slightly warming the edge with a heat gun and rolling it with a steel roller to bevel the edge. Do not overheat the tile. Apply uniform pressure to maintain a consistent bevel on the edge (*Fig 8*).

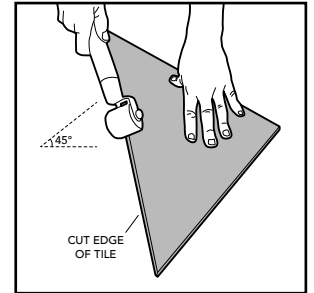


FIGURE 8 Roll the cut edge of the tile to produce a light bevel

ADHESIVE APPLICATION

DS100 Adhesive is the only adhesive recommended for installing CLEO Tile and Plank Flooring. DS100 is a pressure sensitive adhesive that must be allowed to dry to a tack before setting tiles or planks. Adhesive application is similar for all layouts. For tile applications spread the adhesive up to the chalk lines in 3 quadrants (starting quadrant and adjacent quadrants) (*Fig 9*).

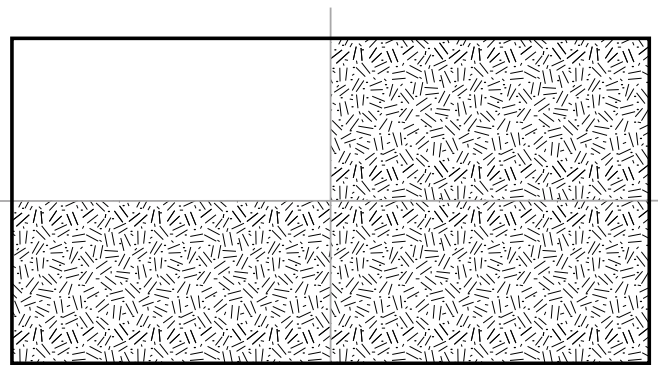


FIGURE 9 Adhesive application for tile

For plank installations spread the adhesive over one half of the floor up to the chalk line (see *Fig 22* on page 9).

Apply adhesive with a 1/16" x 1/32" x 1/32" notched trowel uniformly over the subfloor up to the chalk line(s). Allow adhesive to dry completely to a tack, normally 30 to 60 minutes, longer in cool or humid conditions. Adhesive will turn from light blue to translucent when dry.

TILE INSTALLATION- UN-GROUTED TRADITIONAL EDGE TO EDGE METHOD

Carefully position the first tile in the adhesive at the intersection of the center and perpendicular chalk lines or diagonal chalk lines depending on the layout (Fig 11).

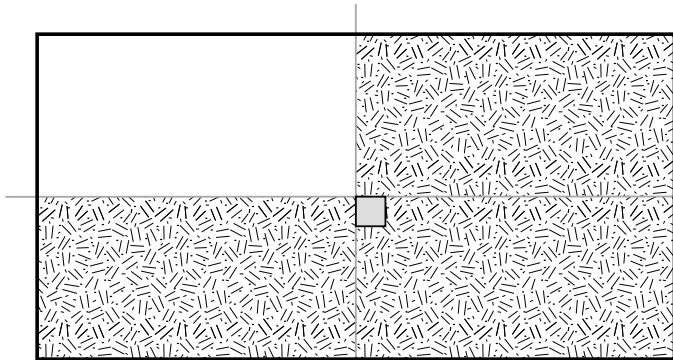


FIGURE 11 Position the tile accurately along the center and perpendicular lines

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 24"x24" tiles in the first quadrant along the center and perpendicular lines in a stair step fashion (Fig 12).

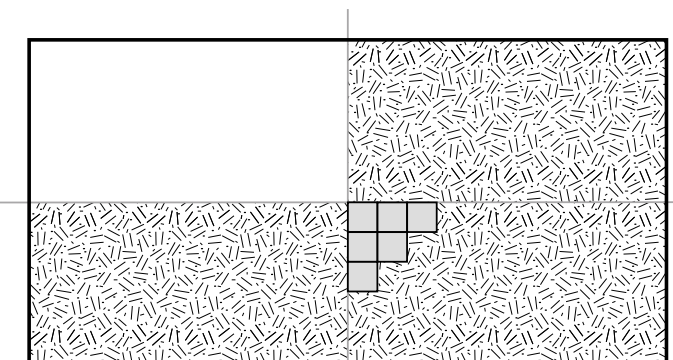


FIGURE 12 Install the field area in a stair step pattern

Install 12"x24" tiles along the center line in straight rows. Complete each row, including cut pieces at the wall before proceeding to the next row.

Always hold the tile in a low angle when positioning it to ensure a neatly fit joint with no gaps. Place tiles together without excessive force. 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 tile directly over the top of the last full tile, making sure all edges are lined up. Use a whole tile as a measuring device, position one edge against the wall and mark the loose tile with a pencil along the opposite edge (Fig 14).

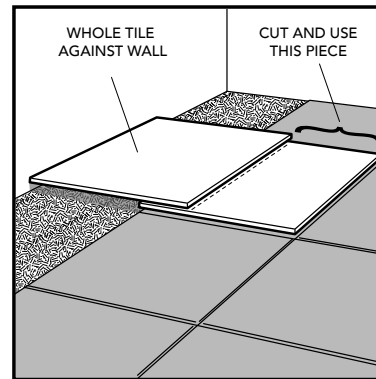


FIGURE 14 Use a full tile to measure the distance to the wall, making sure to subtract grout line width if installing a grouted floor

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

Irregular Cuts

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

GROUTED TILE INSTALLATION

The desired grout line width should be determined before starting the tile installation. It is also important to understand that the finished grout line will be approximately 1/16" wider than the space between the tiles, since the grout will extend on to part of the radius along the top edge of the tile.

- Use spacers to maintain the joint width. Small pieces of 1/8" contract tile cut into 1" squares work very well as spacers, depending on the desired grout line width.
- If standard tile spacers are used it will be necessary to trim one leg of the spacer, otherwise it could interfere with positioning the tiles.
- Stand spacers on end. Do not place tile spacers flat at the intersection of tiles; they can become bonded, making it difficult to remove them without damaging the edge of the tile.
- Carefully position the first tile in the adhesive at the intersection of the center and perpendicular chalk lines or diagonal chalk lines depending on the layout. 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.
- Position two or three spacers along the edge of the first tile then lay the next tile lightly against the spacer without forcing it into place (Fig 15).

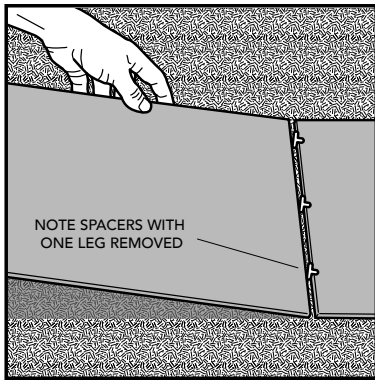


FIGURE 15 Lay the tile lightly against the spacers

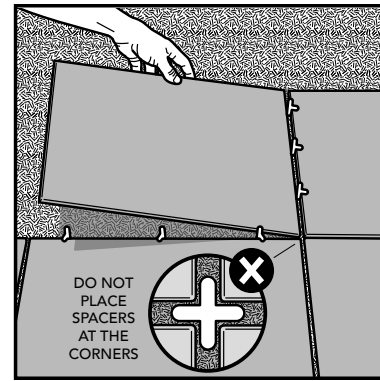


FIGURE 16 Install tile with spacers in straight rows

- Continue to set the tiles in the first row with spacers between the joints following the chalk line. Remove the spacer immediately after setting each tile.
- The second and all successive rows will require additional spacers (two or three at the end and the side depending on the tile size) to set the tiles (Fig 16).
- Continue setting all whole tiles in each quadrant.
- Spread adhesive in the remaining quadrant(s) so it can dry while you are cutting and fitting the last row of tile along the wall.
- Complete this side of the room following the same procedures until the floor including cut pieces is installed.
- Remove all spacers and clean up any adhesive smears following the directions on the adhesive label.
- Roll the floor slowly in both directions with a 100-pound, three section roller within one hour after setting the tiles.
- Re-roll the entire floor just prior to grouting.
- Grout the floor immediately after or within 24 hours to prevent tracked in soil and other contaminants from interfering with the grout application.

Grouting Floors

Tiles must be grouted using UnderFlor Premixed Acrylic Grout. This exclusive grout is designed for high flexural strength and adhesion to the edge of the tile. This feature provides durability to resist cracking from thermal dimensional changes and normal subfloor deflection. Traditional cement grouts are not recommended and will not perform properly.

Grout Application

Tools and Equipment

- Hard green rubber epoxy float
- Installation Accessory Kit DD01 containing:
 - Firm square edge sponge
 - 3M white nylon scrubbing pad
- Spray bottle of water
- Water buckets
- Rubber gloves
- Safety glasses

Soft grout floats and soft sponges are not recommended since they tend to pull the grout out of the joint leaving it shallow.

Surface Preparation

Re-roll the floor just before grouting and check to make sure all edges are tightly seated in the setting adhesive. The joints must be clean and dry. Remove any adhesive smears from the surface and edges of the tile following adhesive label instructions before grouting.

Application

- Always wear rubber gloves when working with grout.
- Start grouting floors at the far end of the room and work toward the entrance.
- Apply grout in small sections, up to 20 sq. ft. and cleanup immediately or before grout films over (approximately 5 minutes).
- Use the tip of a hard rubber float and fully pack the grout into the joints (Fig. 17). Hold the float in a low angle and press firmly with short strokes at a right angle to the joint.

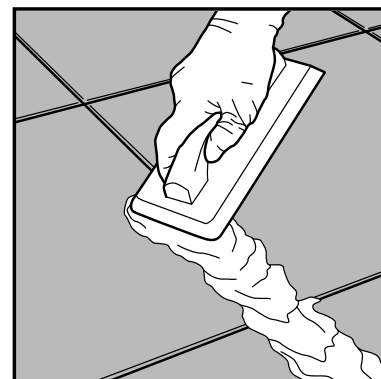


FIGURE 17 Press grout firmly into the joint

- Extend the grout a few inches in to the next row of tile so water does not run into the unfinished joints during cleanup.
- Remove excess grout from the surface of the tile by holding the float at a 45° angle to the floor surface and moving diagonally across the joints. (Fig. 18).

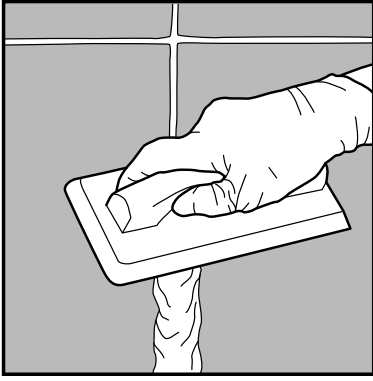


FIGURE 18 Remove excess grout

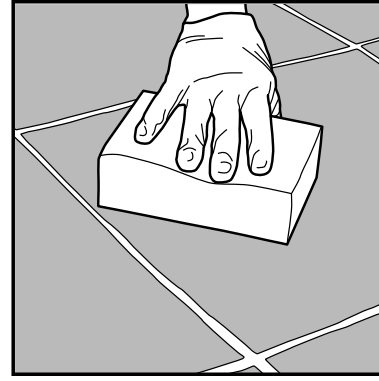


FIGURE 20 Use light pressure to remove the residue

Initial Cleanup

Initial cleanup should be done immediately after finishing each section. The faster the grout is removed from the tile, the easier it is to clean up. *The DD01 Installation Accessory Kit* contains the recommended cleaning pads and sponge to make clean-up easier.

- Apply a light mist of water with the spray bottle over the grouted tiles and allow it to remain on the surface for at least 30 seconds.
- Use a slightly wet 3M white nylon pad to loosen the grout residue.
- Apply light pressure while moving the pad in a circular motion (Fig. 19).

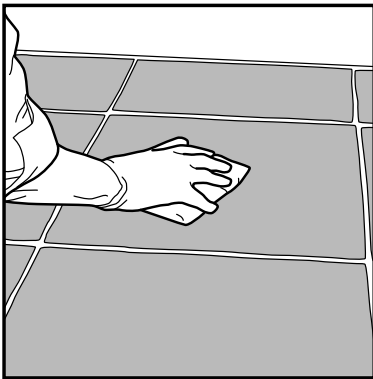


FIGURE 19 Use a white nylon pad to loosen grout on the surface of the tile

- Use a firm square edge sponge to remove the excess water solution. Use light pressure and wipe diagonally across the joints (Fig. 20). Do not allow the water to flow into the un-grouted joints or accumulate in finished areas.
- Then rinse the sponge in clean water and wipe diagonally again to shape joints evenly and remove any remaining grout residue. Change rinse water frequently. Clean tools with water while grout is wet. If allowed to dry, remove with an ammonia-based window cleaner.

Final Cleanup

- Allow grout to dry for 24 hours.
- Remove any remaining grout haze with an ammonia-based window cleaner or a dilute solution of 1/4 cup household ammonia to one gallon of warm water. Apply a small amount of the solution over a small section and allow it to remain for about 30 seconds. Use a clean sponge mop or a 3M nylon white pad to loosen the grout haze.
- Rinse with fresh water and buff with a soft, dry terry cloth towel. Do not use grout haze removers or solvents.
- Keep all traffic off newly tiled floors for 24 hours.
- Resume normal traffic after 48 hours.

Immediately after installation

- Install or replace base moldings
- Return furniture to the room by rolling or sliding them over strips of hardboard
- Use acrylic caulking at bathtubs, showers and other wet areas to prevent water from seeping under the floor
- Wait 48 hours before damp mopping the floor and at least 5 days before wet mopping or washing. Adhesive smears can be removed with mineral spirits

PLANK INSTALLATION

Plank Layout

A plank layout is very simple since it does not require a perpendicular line. 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 side walls (Fig 21).



FIGURE 21 Chalk line

Adhesive Application

DS100 is a pressure sensitive adhesive that must be allowed to dry to a tack before setting planks. For plank installations spread the adhesive over one half of the floor up to the center chalk line (Fig 22).

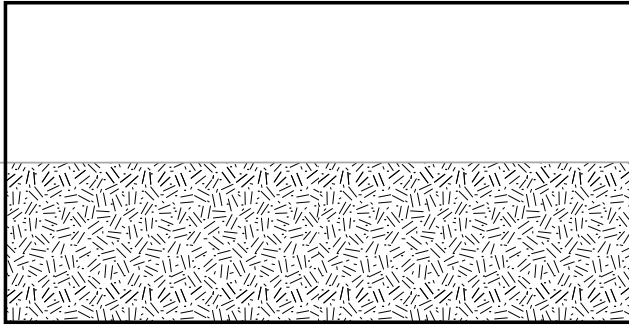


FIGURE 22 Spread adhesive over ½ of the floor up to the chalk line

- Apply adhesive with a 1/16"x 1/32"x 1/32" notched trowel uniformly over the subfloor up to the chalk line(s).
- Allow adhesive to dry completely to a tack, normally 30 to 60 minutes, longer in cool or humid conditions. Adhesive will turn from light blue to translucent when dry. The plank will bond instantly upon contact so it must be positioned accurately without sliding it.
- Press the plank firmly into the adhesive once it is in position.
- Carefully install the first row of plank along the edge of the chalk line. Start with a whole plank in the first row.
- Use 1/3rd of a plank to start the second row and 2/3rds of a plank for the third row.
- Thereafter install planks in a random layout offsetting end joints by at least 8". (Fig.23)

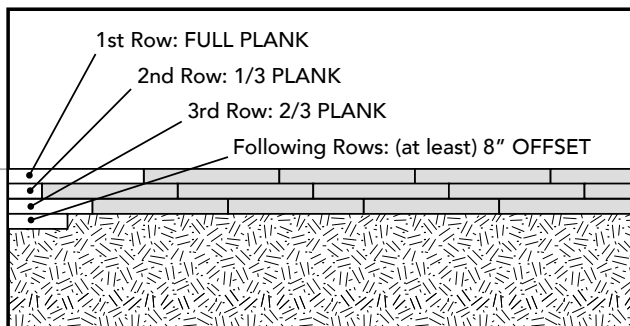


FIGURE 23 Plank layout

- 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.

UNDERFLOR UNDERLAYMENT

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

General Information

- Always roll sheets of UnderFlor with the vinyl side out around a sturdy tube for storing or transporting.
- Condition the room and all flooring materials at a constant temperature between 65F (18C) and 85F (29C) for 48 hours prior to, during, and 48 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.

UnderFlor Installation

Install UnderFlor with the vinyl side down just prior to installation of finished flooring.

When installing plank floors or rectangular tiles, always install UnderFlor running perpendicular to the long dimension of the product (Fig. 24).

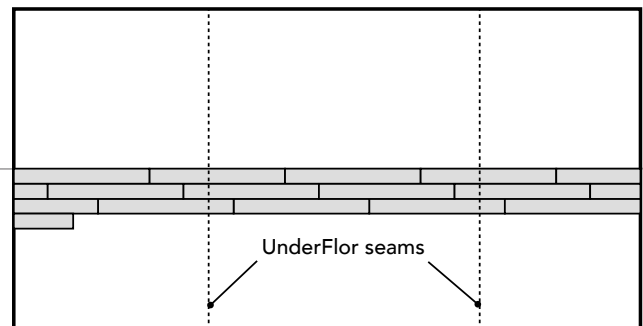


FIGURE 24 Install UnderFlor perpendicular to the long dimension of plank or rectangular tile flooring

Install planks with staggered end joints positioned at least 2" away from the seams in the underlayment. Install square and rectangular tile with joints positioned at least 4" away from the seams in the underlayment.

- 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 contaminants from affecting 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 4" away from the seams in the UnderFlor.
- Spread DS100 Adhesive using a 1/16"x 1/32" x1/32" 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. It may take longer in cool or humid conditions. Adhesive will turn from light blue 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 ¼" 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

- Install 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.

WALL APPLICATIONS

CLEO Luxury Flooring can be installed over most smooth, clean and dry interior wall surfaces with DS100 Adhesive. CLEO meets ASTM E-84 Class C for surface burning characteristics of building materials. CLEO is not recommended in wet areas like showers or on bathtub walls, ceilings, countertops or in areas where temperatures will fall below 55F or above 100F.

Suitable surfaces include: painted or primed plaster or drywall, masonry, plywood or plywood paneling that is ¼" or heavier and ceramic that has been leveled with latex modified portland cement patching compound.

Do not install CLEO over brick, cement block or other rough surfaces, wall paper or wall covering.

Preparation

Review and follow all National, State and Local Electric Codes. Some states and local municipalities require a licensed electrician for all electrical work. Before starting this work check and follow all applicable regulations. This work should be done by a qualified person.

⚡ **WARNING:** Electrical shock hazard exists. To prevent the possibility of electrical shock, turn electrical power off at the breaker panel for all receptacles, switches and electrical fixtures in the room. Remove electrical switch and receptacle plate covers and loosen wall mounted light fixtures. If the wall will be grouted, tape a piece of plastic over the opening to prevent water from seeping in to it.

Note: Switches and receptacles may need to be adjusted by loosening the mounting screws so the tile can be slid behind it. Re-tighten when complete. Applicable electric codes may require the installation of an extender box insert to ensure that the fixture is tightly fastened and seated with in the box.

Remove any wall trim, including baseboards that will interfere with the installation.

Set protruding nails or screws and sand high spots. Lightly sand painted surfaces to remove the sheen then rinse and allow to dry.

Layout

Wall layouts are best accomplished using a level to establish the starting lines. This is particularly important when covering two or more adjoining walls.

Plank Layout

- Place a mark on the center of the wall.
- Use a level and mark a horizontal center line across the entire wall with a pencil (Fig 25).

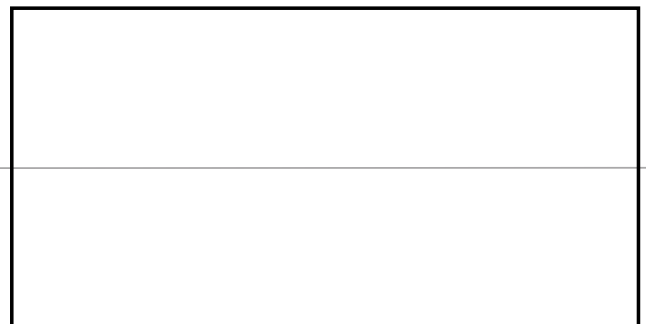


FIGURE 25 Horizontal line for plank layout

- Measure the distance from the centerline to the ceiling and divide the measurement by the width dimension of the plank. If the remainder is less than half the plank width, adjust the centerline ½ the width of the plank for a balanced layout.

Tile layout

- Place a mark on the center of the wall.
- Use a level and mark a horizontal center line across the entire wall with a pencil (Fig 26 'A').
- Next place a mark at the center of the horizontal line.
- Use a level and extend a vertical line from the floor to the ceiling with a pencil (Fig 26 'B').



FIGURE 26 Horizontal and vertical lines for tile layout

- Adjust the line(s) if necessary to avoid small cut pieces at the border.

Wall Installation

- Apply DS100 Adhesive with a 3/8" nap paint roller at a coverage rate of 250 square feet per gallon. Apply only enough adhesive that can be covered in 30 minutes or while adhesive is in a semi wet state.
- Allow adhesive to tack up for 15 to 20 minutes but do not allow it to dry completely to a tack. When adhesive is ready the tile or plank can be positioned and adjusted without slipping.
- Start laying the first plank along the centerline and press it in to place. If installing tile start the installation at the intersection of the horizontal and vertical lines. Complete each row including cut pieces at the end of the row. On plank installations stagger end joints randomly by at least 8". If the wall will be grouted use spacers at the end and side joints.
- To fit cut pieces at the perimeter measure from the last whole tile to the corner of the wall or scribe the piece. *Tip: When scribing a piece to fit, position a piece of double face tape on the back of the tile to help hold it in place while scribing it.*
- Continue installing tile in rows to complete the installation. Roll the wall with a wall roller to achieve 100% transfer of adhesive to the back of the tile.

Grouting

- When grouting a wall, work in columns from the floor to the ceiling. This will prevent clean up water from entering in to open joints.
- First place an absorbent towel or cloth on the floor in the immediate area where you are grouting to absorb excess clean up water.
- Use a firm rubber grout float to pack the grout into the joints.
- Hold the float on a 45 degree angle to remove excess grout.
- Spray a mist of water on the grouted tiles and allow it to soak in for about 30 seconds.
- Then use a dampened 3M white pad to loosen the residue. Apply light pressure in a circular motion.

- To remove the grout residue use a firm dampened sponge. Start at the top of the column near the ceiling and wipe diagonally.
- Shape joints if needed.
- When working with plank products that have an embossed wood grain wipe parallel with the grain to remove residue from the embossing.
- Continue grouting the entire wall using the absorbent towel on the floor and working in columns to complete the installation.
- Grout will dry in 24 hours.
- Allow 48 hours before re-wetting it.
- To complete the installation reinstall trim and electric switch and receptacle covers.

TILE REPAIR

Tiles can be repaired easily if it is necessary to replace a tile.

Grouted Floors

- Use a heat gun to warm the grout along one edge of the tile. The grout will soften when heated. The floor can temporarily soften, so take care to avoid damage. Do not overheat. Be careful not to melt the tile.
- Place a straight edge over the center of the grout line and cut the grout with a sharp utility knife (Fig. 25).
- Remove as much of the grout as possible using care to avoid

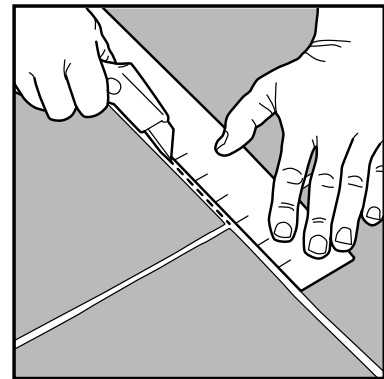


FIGURE 25
Cut grout while warm

cutting into the edge of the adjacent tile (or into UnderFlor below, if used).

- Repeat this process on all four sides of the damaged tile.
- Next, heat the tile a few inches in from the corner. While the tile is warm, drive a putty knife or screwdriver into the heated area with a hammer (Fig. 26).

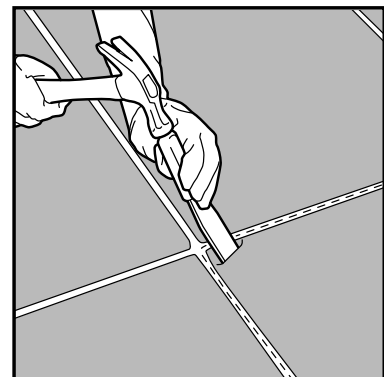


FIGURE 26
Avoid damaging the edges of the adjacent tiles

- Pry upward to release the tile from the adhesive. Continue lifting the tile as you heat it until it is completely removed (Fig. 27).

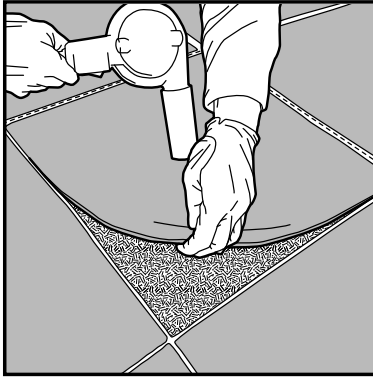


FIGURE 27 Use a heat gun to warm the tile and pry loose from the adhesive.

- To install the new tile, re-apply DS100 Adhesive over the exposed subfloor using the flat side of a trowel; it is not necessary to remove the old adhesive.
- Allow the adhesive to dry completely to a tack and then reinstall the new tile using spacers to maintain the grout line width.
- Roll the tile with a 100-pound, three-section roller.
- Re-grout the tile with UnderFlor Premixed Acrylic Grout following label instructions.
- Allow grout to dry for 24 hours and remove any remaining grout haze.

PLANK 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 UnderFlor below if used.
- 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.
- Re-apply adhesive over the exposed subfloor using the flat side of the trowel and allow it to dry completely.
- 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

PREVENTIVE CARE

- Make sure furniture legs have large surface, non-staining floor protectors.
- Replace small, narrow metal or dome-shaped glides with smooth, flat glides that are in flat contact with the floor. Glides should be equipped with self-adhesive felt pads to avoid scratching the surface of the floor. The pads should be checked

periodically for grit and wear and replaced when necessary.

- Heavy furniture or appliances that are not moved often should be equipped with flat, non-staining composition furniture casters or cups of appropriate size – available square from 1 1/2" to 2 5/8" and round from 1 3/8" to 1 5/8".
- Mobile appliances and furniture should be equipped with easily swiveling casters. They should be at least 2" in diameter with non-staining hard rubber treads at least 3/4" wide. Do not use ball-shaped casters; they can damage the floor.
- Place mats at outside entrances to prevent dirt grit and soil from being tracked onto your floor.

CAUTION: CLEO FLOORS LIKE OTHER TYPES OF HARD-SURFACED FLOORS, CAN BECOME SLIPPERY WHEN WET. ALLOW TIME FOR THE FLOOR TO DRY AFTER WASHING. IMMEDIATELY WIPE UP WET AREAS FROM SPILLS OR WET FEET. PLACE MATS AT OUTSIDE ENTRANCES TO PREVENT WATER, SNOW OR ICE FROM BEING TRACKED ONTO THE FLOOR. IMPROPER CLEANERS, POLISHES OR FINISHES CAN ALSO CAUSE SLIPPERINESS.

REGULAR CARE

- Sweep or vacuum regularly to remove grit and sand that can abrade, dull or scratch your new floor. Do not use a vacuum with a beater brush, because it may damage the floor's surface.
- Wipe up spills promptly with a damp cloth or mop.
- Wash the floor with Bright 'N Easy No-Rinse Cleaner or other suitable floor cleaner.

CAUTION: AVOID ONE-STEP "MOP AND POLISH" PRODUCTS, DISHWASHING LIQUIDS AND OIL-BASED CLEANERS. THESE MAY LEAVE A RESIDUE WHICH CAN ATTRACT DIRT AND DULL THE FLOOR'S FINISH. AVOID CLEANERS THAT CONTAIN ABRASIVES OR SOLVENTS WHICH MAY PERMANENTLY DAMAGE THE FLOOR.

- Do not use silicone sealers or penetrating sealers on the tile surface. A copolymer or acrylic grout sealer compatible with acrylic grouts may be used on the grout. Do not use a penetrating silicone sealer on the grout.
- Do not buff the floor.
- Do not apply wax, floor finish, or polish to CLEO Luxury Tile or Plank.