

## PRODUCT DESCRIPTION

DuraCeramic Origins and DuraCeramic Dimensions flooring consists of tile formats that are installed either directly adhered to the subfloor surface or as a floating floor over UnderFlor or UnderFlor Acoustic underlayment. DuraCeramic 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. DuraCeramic is recommended for residential and light commercial applications. Light commercial installations must be installed either directly bonded to the subfloor, or installed over UnderFlor Acoustic.

## ADHESIVE DESCRIPTION

Use UnderFlor DS100 Pressure Sensitive Adhesive for installation over UnderFlor, UnderFlor Acoustic and all approved subfloor surfaces.

## WARNING

### Existing Resilient Flooring

**DO NOT SAND, DRY SWEEP, 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 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

## MOLD AND MILDEW ISSUES

Prior to removing an existing floor following the RFCI Recommended Work Practices for Removal of Resilient Floor Coverings (unless state or local law requires other measures), if

there are visible indications of mold or mildew or the presence of a strong musty odor in the area where resilient flooring is to be removed or installed, the source of the problem should be identified and corrected before proceeding with the flooring work. To deal with mold and mildew issues you should refer to the EPA guidelines that address mold and mildew. Depending on the mold and mildew condition present, those remediation options range from clean up measures using gloves and biocide to hiring a professional remediation contractor to address the condition. Remediation measures may require structural repairs such as replacing the underlayment and/or subfloor contaminated with mold and mildew as a result of prolonged exposure to moisture.

The EPA mold guidelines are contained in two publications “A Brief Guide to Mold, Moisture and Your Home” (EPA 402-K-02-003) and “Mold Remediation in Schools and Commercial Buildings” (EPA 402-K-01-001). Appendix B of the “Mold Remediation in Schools and Commercial Buildings” publication describes potential health effects from exposure to mold, such as allergic and asthma reactions and irritation to eyes, skin, nose and throat. These publications can be located on EPA’s website [www.epa.gov/mold](http://www.epa.gov/mold).

## LEAD PAINT

Installers should follow the EPA’s 2008 Lead-Based Paint Renovation, Repair and Painting (RRP) Rule (as amended in 2010 and 2011). Under the rule firms performing renovation, repair and painting projects that disturb lead-based paint in homes, child care facilities, and kindergartens built before 1978 must be EPA- or state-certified and must use certified renovators who follow specific work practices to prevent lead contamination. This includes in-house maintenance staff and many types of outside contractors.

## SAFETY PRECAUTIONS

Safety for yourself and others on the job site is your responsibility as a professional flooring installer. Read and observe the following safety precautions.

- Keep work areas free of obstructions, such as tools, scraps or loose tiles, and dispose of scrap materials promptly and properly to eliminate a slip or trip hazard.
- Always use the correct lifting practices.
- Use heavy-duty extension cords and keep them in good repair.
- If using minerals spirits as suggested in this guide, CAUTION: Minerals spirits is a flammable material. Read and follow cautionary instructions on the labels of these products.

- Wear protective equipment when appropriate such as safety glasses, respirators, NIOSH-designated dust masks, knee-pads, gloves, etc.

Read and follow the safety precautions and warnings printed on the label of the installation accessory products being used. Obtain the appropriate Safety Data Sheets (SDS) for information that may be required for products which may contain hazardous materials. You may obtain an SDS for Congoleum products by calling or writing to your Congoleum distributor or contacting Congoleum Corporation, Installation Department, P.O. Box 3127, Mercerville, NJ 08619, or calling at 609-584-3805.

## 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 7 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 100°F (38°C). Failure to condition the materials and subfloor or maintain proper temperatures can lead to tile joint peaking or separation. Congoleum will not assume liability for installation or performance failures resulting from improper temperatures.
- Un-opened 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 or UnderFlor Acoustic. 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. 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.

## TOOLS AND MATERIALS

- UnderFlor or UnderFlor Acoustic Underlayment (optional)
- UnderFlor DS100 Adhesive
- 1/16"x 1/32" x 1/32" U-notched trowel
- 100-pound, 3-section, steel roller
- Chalk line
- Carpenter square
- Sharp utility knife and replacement blades (tile cutter optional)
- Cutting board
- Tape measure
- Pencil

## For Grouted Floors

- Tile spacers
- Hard green rubber epoxy float
- Installation Accessory Kit DD01 containing: Firm, square edge cellulose sponge and 3M white nylon scrubbing pads
- Spray bottle of water
- 5-gallon buckets
- Rubber gloves

## PREPARING THE AREA

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

## 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 fully adhered installation methods.

Subfloor Surface	Installing over UnderFlor or UnderFlor Acoustic	Installing Directly Adhered to Subfloor
Suspended Wood subfloor over joists or trusses up to 19.2" OC over 18" of well-ventilated air space	Single layer Sturd-I-Floor rated panel 23/32" or heavier, or double layer construction, minimum 1" thick.	Double layer construction, minimum 1" thick with suitable ¼" thick 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	ASTM F1869 - MVER not to exceed 7 lbs. /1000 ft <sup>2</sup> /24 hrs. ASTM F2170 – Relative Humidity not to exceed 80%.	ASTM F1869 - MVER not to exceed 5 lbs. /1000 ft <sup>2</sup> /24 hrs. when tested with anhydrous calcium chloride test kits. ASTM F2170 – Relative Humidity not to exceed 80%.
Lightweight Concrete or Gypsum Topping with a minimum 100 lb. dry density and minimum 3000 psi compression rating	<b>Preferred Method</b> 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	<b>Preferred Method</b>	Gapping at end joints can occur with temperature fluctuations.
	The temperature of the floor should be limited to 70°F (21°C) for 48 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	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 heavily cushioned floors, cushioned-backed flooring, flooring containing asbestos self-adhered tile, tile installed below grade level, or products with ScotchGard or other non-stick coatings. Remove wax or polish and level embossed areas with a Portland cement-based patching compound.
Ceramic, Marble and Granite	Tile must be well bonded. Grind high spots and fill low areas and grout joints to a smooth, flat surface with a latex modified Portland cement underlayment.	
Patching Compound	Portland cement-based compound such as Mapei Plani-Patch, Ardex Feather Finish or equal.	
UnderFlor Acoustic	UnderFlor Acoustic is the approved acoustic underlayment. Single or double glue applications are recommended.	

## SUBFLOOR PREPARATION

All subfloor surfaces must be clean, dry, smooth, and structurally sound. The surface should be 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 to be directly bonded to the subfloor only. Floating installations over UnderFlor and UnderFlor Acoustic can be installed over paint, dry adhesive residue, wax, curing and parting compounds, sealers and surface hardeners. Deviations in the flatness of the subfloor cannot exceed 1/16" in 1' or 3/16" in 10'. Regardless of the installation method, all surface imperfections should be leveled with a Portland cement-based 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) when bonding flooring directly to the subfloor or over 1/8" on floating floors installed over UnderFlor or UnderFlor Acoustic. Rough, weathered or damaged subfloor panels must be sanded smooth or covered with a suitable underlayment panel. Always follow underlayment manufacturer installation recommendations.

Congoleum will not assume responsibility for claims related to subfloor problems regardless of the underlayment or subfloor material used.

**Concrete floors** must be constructed, finished and cured in accordance with the latest guidelines of the American Concrete Institute (ACI) 302 Guide for Concrete Floor and Slab Construction and ASTM F710 "Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring". The concrete slab must be protected from ground moisture with an effective and intact vapor retarder. Moisture vapor emissions must not exceed 5-lbs./1000 ft.<sup>2</sup>/24 hrs when tested with anhydrous calcium chloride test kits in accordance with ASTM F1869 or be greater than 80% RH (relative humidity) when tested with in situ probes in accordance with ASTM F2170. Surface pH must be between 5 and 9. Level rough or uneven surfaces, cracks and control joints with a Portland cement-based patching compound. Do not install flooring over expansion joints or in areas with excessive

moisture vapor emissions, known hydrostatic pressure problems or high alkali conditions exist.

**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 a Portland cement-based patching compound to level embossed floors. Do not install new flooring over loose laid or perimeter fastened floors, soft or heavily cushioned floors, cushioned-backed flooring, flooring containing asbestos, self-adhered tile, tile installed below grade level, or products with ScotchGard™ or other non-stick coatings. Installation over existing flooring may reduce the indentation resistance of the new floor.

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.

## UNDERFLOR AND UNDERFLOR ACOUSTIC UNDERLAYMENT

UnderFlor and UnderFlor Acoustic may be used as an alternative to bonding the flooring directly to the subfloor. They are the recommended underlayment systems that can provide an economical solution for installing a floating floor over a variety of subfloor surfaces including: wood, concrete, most old hard surface flooring, gypsum topping, even old adhesive residue and painted surfaces. UnderFlor Acoustic suppresses noise and enhances a floor's comfort underfoot.

- Recommended use: All grade levels. Interior use in dry, heated areas. Do not install over ramps, in showers or other wet areas.
- UnderFlor is 6' wide, available in both 16.67' and 120' lengths (100 and 720 ft<sup>2</sup>). UnderFlor Acoustic Underlayment is available in a 54" wide, 44.5' long roll (200 ft<sup>2</sup>).
- 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 all vertical surfaces and 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 UnderFlor AD32 or DS100 Adhesive for installing flooring over UnderFlor and UnderFlor Acoustic. Hard setting adhesives should not be used.

## UNDERFLOR OR UNDERFLOR ACOUSTIC INSTALLATION

Install just prior to installation of finished flooring. When installing rectangular tiles, always install UnderFlor running perpendicular to the long dimension of the product (Fig. 1A-1B).

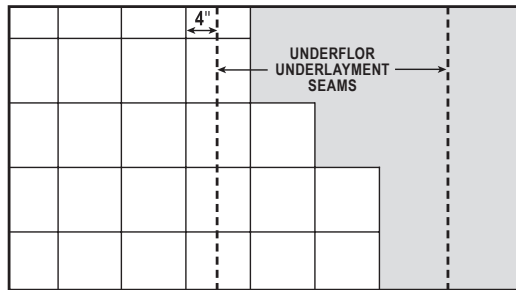


FIGURE 1A: Position seams at least 4" away from tile joints

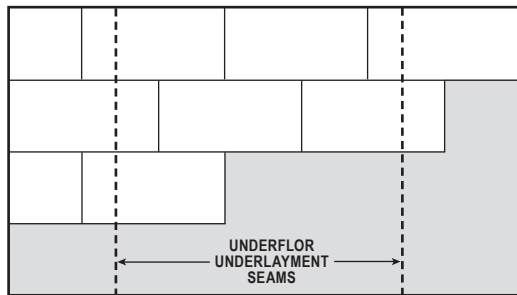


FIGURE 1B: Install UnderFlor underlayment with seams perpendicular to the long dimension of the DuraCeramic Dimensions flooring.

Install square and rectangular tile with joints positioned at least 4" (10 cm) away from the seams in the underlayment.

Thoroughly sweep the floor to remove all loose dirt and debris. Install UnderFlor with the vinyl side down. UnderFlor Acoustic can be installed with either side up.

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 hand roller.

NOTE: UnderFlor Acoustic Underlayment may also be fully adhered to the subfloor for a "double-bonded" installation, if desired. Complete all necessary subfloor preparation and lay out the UnderFlor Acoustic. Lap one half of each sheet back and apply UnderFlor AD32 or DS100 to the subfloor with the recommended trowel and allow to dry to a tack. Set the UnderFlor Acoustic into the dry adhesive and repeat for the opposite side. Roll with a 100 pound, three-section steel roller before setting flooring.

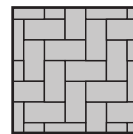
Suitable Packaging Tapes Include:

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

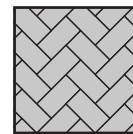
Do not use masking tape, fiber reinforced tape, duct tape or other thick tapes that might telegraph through the finished flooring. Install flooring immediately after installing UnderFlor or UnderFlor Acoustic to prevent contaminants from affecting the adhesive bond.

## LAYOUT

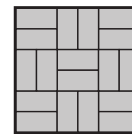
### Tile layout examples



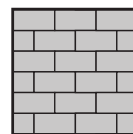
Herringbone 90°



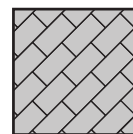
Herringbone 45°



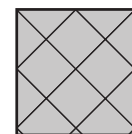
Basket Weave



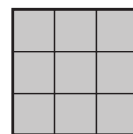
1/2 Drop



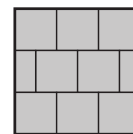
1/2 Drop 45°



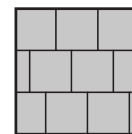
Diamond



Square



1/3 Drop



1/3 Drop

When planning the flooring layout make sure tile joints fall at least 4" (10 cm) away from joints in the underlayment and/or seams in existing flooring. The flooring layout should always be considered first when installing new underlayment or UnderFlor to ensure seam placement will not interfere with the desired floor layout.

## Tile Installations

Tiles can be installed grouted or non-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. Some custom patterns will require the traditional edge to edge (non-grouted) fit to maintain alignment. Refer to the chart below for grouting recommendations.

	DURACERAMIC ORIGINS (15 5/8" X 15 5/8")	DURACERAMIC DIMENSIONS (12" X 24")
SQUARE OR STRAIGHT	Yes	Yes
DIAGONAL	Yes	No
1/2 DROP	Yes	Yes
1/3 DROP	No	Yes
PAVER	No	Non-Grouted Only
HERRINGBONE	No	Non-Grouted Only
BASKETWEAVE	No	Non-Grouted Only

## 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. 2 - "A").

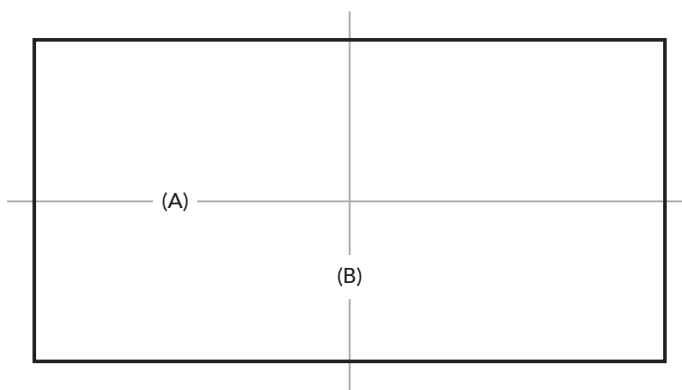


FIGURE 2A: Snap a chalk line in the center of the room.

Find the center of the line and snap a second chalk line at a right angle using the 3-4-5 method (Fig 2 - "B").

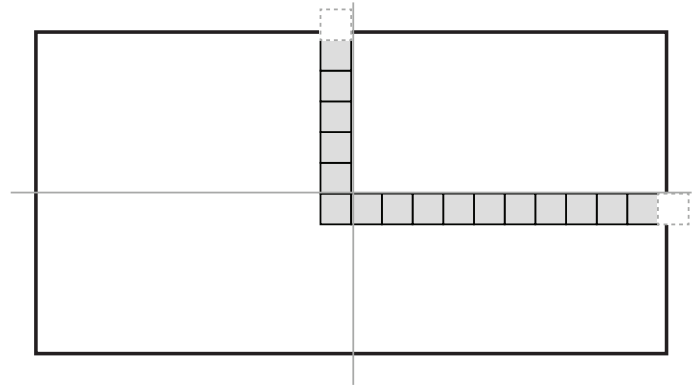


FIGURE 2B: Dry lay out tiles to avoid narrow pieces at the ends. Adjust the chalk lines if necessary to avoid narrow pieces at the side walls (Fig. 3B).

Measure or make a dry layout of loose tiles along the chalk lines to one end wall and one side wall. If the distance between the edge of the last full tile and the wall is less than a half tile, establish a new center line(s) one-half the dimension of a full tile away (Fig. 3).

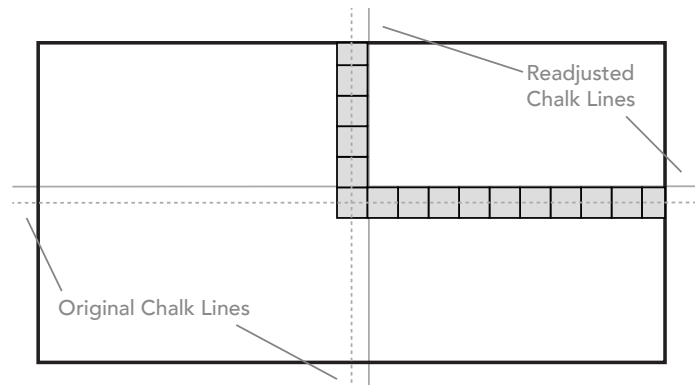


FIGURE 3: Adjust the layout to eliminate narrow pieces at the ends.

## 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:  $24" \div 2 = 12"$ ). Snap a new chalk line 12" away from the perpendicular chalk line to establish the second starting location (Fig. 4).

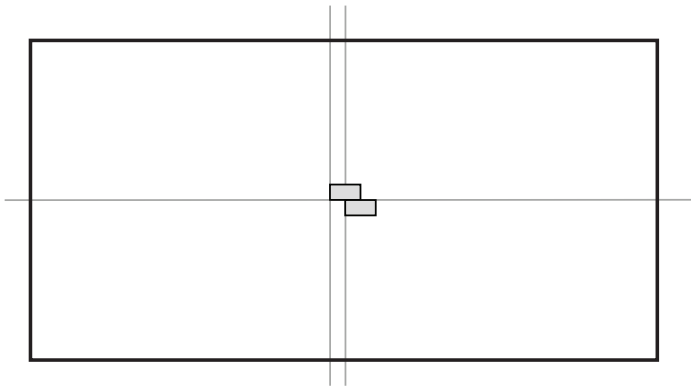


FIGURE 4: Chalk lines for a 1/2 drop pattern

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. 5). 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.

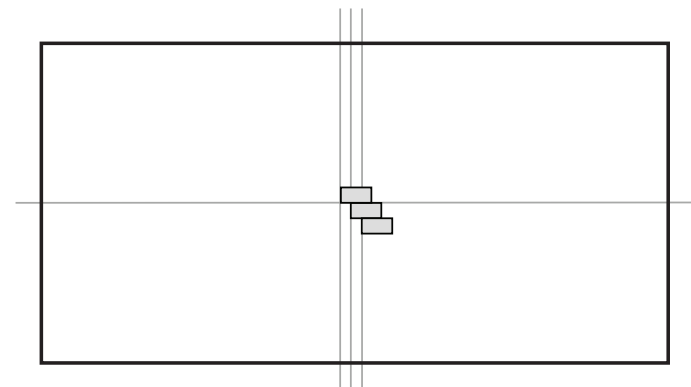


FIGURE 5 Chalk lines for a 1/3 Drop pattern

## 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. 6A).

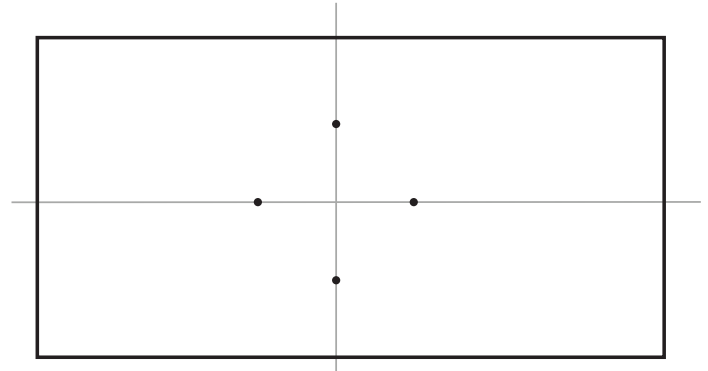


FIGURE 6A Mark four points the same distance from center of the room

Use a slightly larger arbitrary dimension and mark an arc outward on either side of the centerline (Fig. 6B).

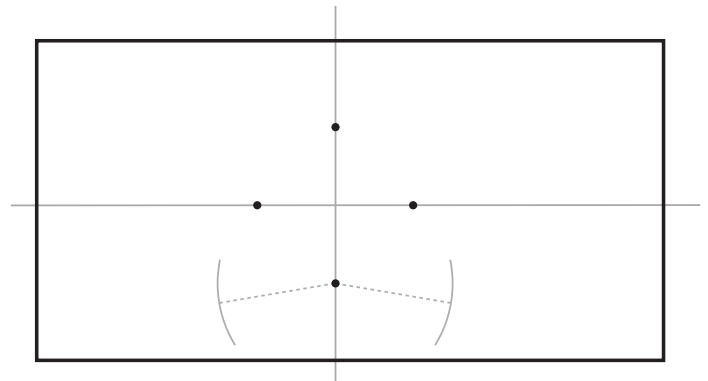


FIGURE 6B Mark two arcs from one point

Mark out two arcs from each of the other three remaining points (Fig. 6C).

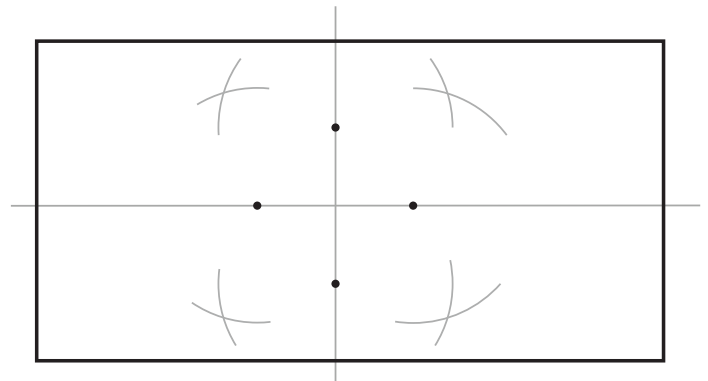
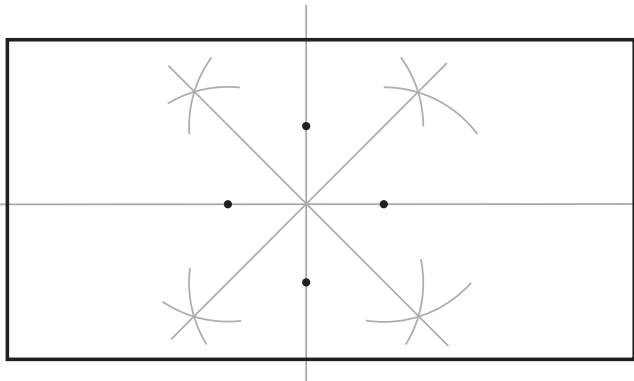


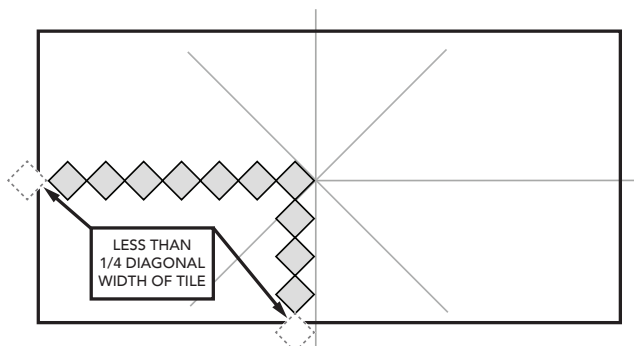
FIGURE 6C Mark two arcs from each of the other points

Snap diagonal chalk lines at the point where the marks intersect (Fig. 6D)



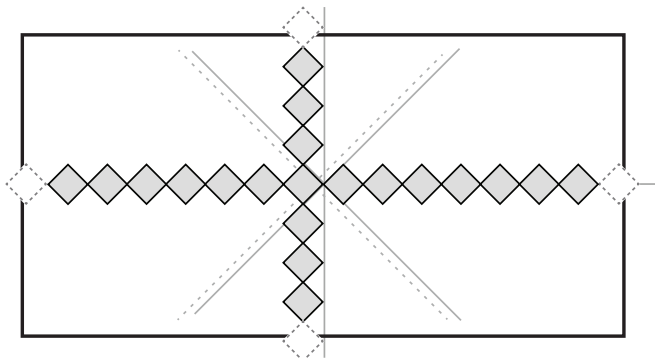
**FIGURE 6D** Snap diagonal chalk lines where the arcs intersect with the center

If done correctly, the chalk lines will intersect at the center point. Make a dry layout in one quadrant along the center and perpendicular chalk lines (Fig. 7).



**FIGURE 7** 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. 8).



**FIGURE 8** Snap new chalk lines for better balance

This will provide a balanced layout with larger cut tiles around the perimeter.

The Herringbone pattern can be laid on a 45° or 90° angle depending on the desired appearance. Do not install a Herringbone pattern using grout, use only the non-grouted, 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.

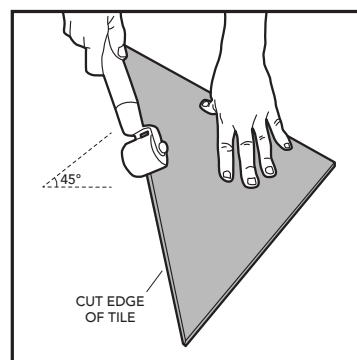
### Herringbone 45°

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 by slightly warming the edge with a heat gun and rolling it with a steel hand roller to bevel the edge. Do not overheat the tile. Apply uniform pressure to maintain a consistent bevel on the edge (Fig. 9).



**FIGURE 9** Roll the cut edge of the tile to produce a light bevel



## INSTALLATION RECOMMENDATIONS

Prepare the subfloor and determine the layout as previously described. The adhesive can be spread over one-half of the floor provided it can be covered with tile in approximately 12 hours. Periodically check the trowel for wear, particularly on concrete floors. Worn trowels should be replaced. The use of the correct adhesive and proper application is critical for a quality, trouble-free installation. Excessive amounts of adhesive will result in increased indentation, telegraphing or exudation (oozing) between the tile in service depending upon the type of adhesive used; whereas, insufficient coverage, caused by spreading too thin or using worn trowels, will prevent proper adhesion of the tile.

DS100 Adhesive is the only adhesive recommended for installing DuraCeramic flooring. DS100 is a pressure sensitive adhesive that must be allowed to dry to a tack before setting tile. 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. 10).

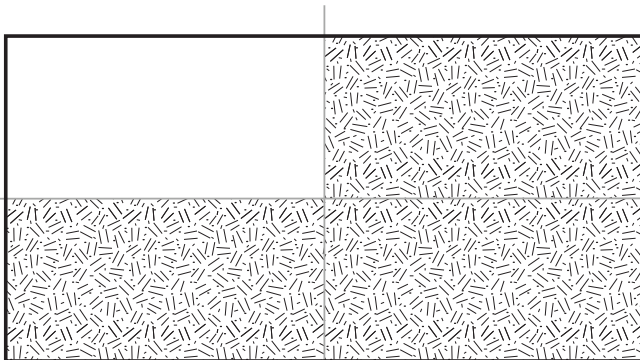


FIGURE 10 Adhesive application for tile

Apply adhesive with a 1/16" x 1/32" x 1/32" U-notched trowel uniformly over the subfloor up to the chalk line(s). Allow adhesive to dry completely to a tack, normally 45 to 60 minutes, longer in cool or humid conditions. Adhesive will turn from light blue to translucent when dry and will not transfer to fingers when lightly touched.

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. Directional arrows are printed on the back of each tile. DuraCeramic Origins should be installed with alternating tiles quarter-turned for the best overall appearance and joint quality.

DuraCeramic Dimensions should be installed so that the arrows point in opposite directions (Fig 11).

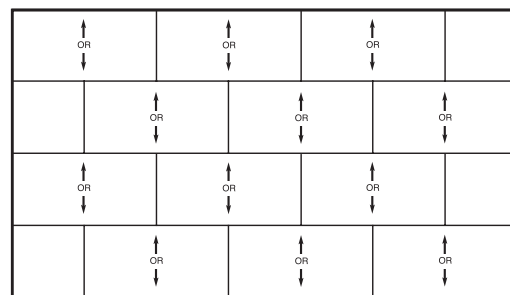
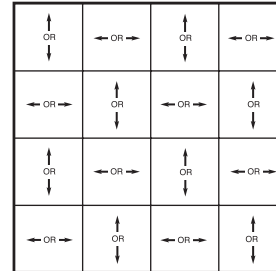


FIGURE 11: Turn tiles as shown.

Tiles should be laid starting at the center of the room, working towards the wall. The border tiles should be scribed to the wall, cut and fit in place after the field tiles have been installed.

## TILE INSTALLATION - NON-GROUTED 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. 12).

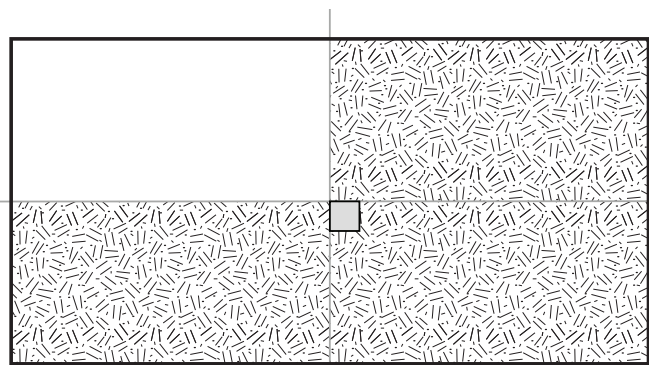
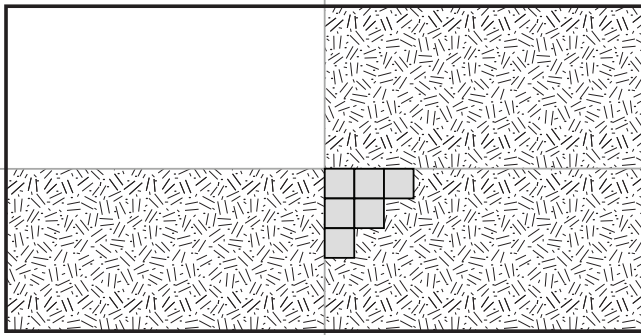


FIGURE 12: Position the tile accurately along the center and perpendicular lines

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 16" x 16" tiles in the first quadrant along the center and perpendicular lines in a stair step fashion (Fig. 13).



**FIGURE 13** Install the field area in a stair step pattern

Install 12"x 24" tiles along the center line in straight rows. Complete each row, including cut pieces at the wall before proceeding to the next row.

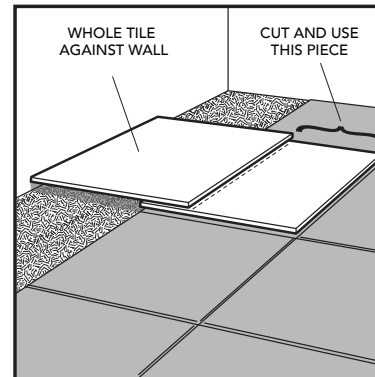
Always hold the tile in a low angle when positioning it to ensure a neatly fit joint with no gaps. Place tiles together without excessive force. At the end of each row the tile will need to be cut to fit. Be sure to place cut ends toward the wall. Complete the opposite side of the room following the same procedure and roll the entire floor in both directions with a 100 pound, three-section steel 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. For installations over UnderFlor or UnderFlor Acoustic Underlayments, leave a 1/4" gap along the wall 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 for expansion space when installing a grouted floor.

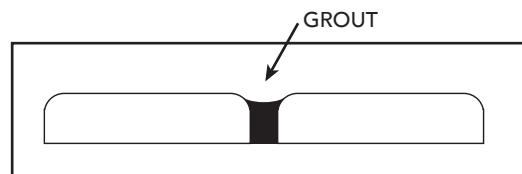
Next, place the marked tile on a cutting board. Using a carpenter square as a guide, score the pencil line carefully with a sharp utility knife. Break or cut the tile along the score mark. Or, use a tile cutter to cut at the mark. Set the cut tile into place with the cut edge against the wall.

### Irregular Cuts

Scribe the tile to fit to irregular shapes such as door trim, pipes, etc. Cut with a sharp 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 rows, since the grout will extend on to part of the radius along the top edge of the product (Fig. 15).



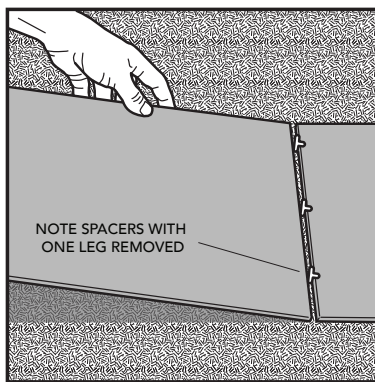
**FIGURE 15:** The finished grout line width is wider than the space between the tiles.

Spacer Size	1/16"	1/8"	3/16"	1/4"
Actual Grout Line Width	1/8"	3/16" to 7/32"	1/4" to 9/32"	5/16" to 11/32"

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 tile. Stand spacers on end. Do not place spacers flat at the intersection of

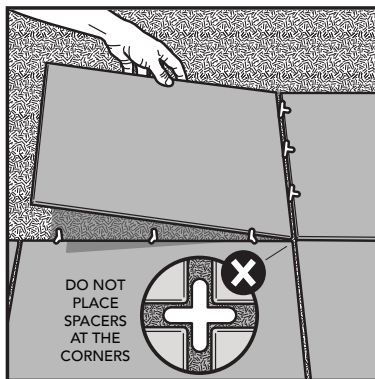
the tiles; they can become bonded, making it difficult to remove them without damaging the edge of the tile.

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 (at least one spacer every 1') along the edge of the first tile then lay the next tile lightly against the spacer without forcing it into place (Fig. 16).



**FIGURE 16** Lay the tile lightly against the spacers

Continue to set the tile in the first row with spacers between the joints following the chalk line. Remove the spacers 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 tile (Fig. 17).



**FIGURE 17** Install tile with spacers in straight rows

Continue setting all whole tiles in the adhesive out toward the walls. Spread the adhesive on the second half of the floor so it can dry while the last row of tiles are cut and installed 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 steel 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

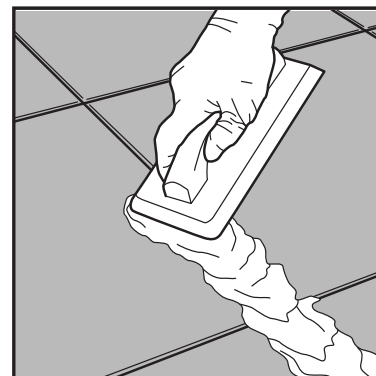
Tiles must be grouted using UnderFlor Premixed Acrylic Grout. This exclusive grout is designed for high flexural strength and adhesion to the edge of the tile. This feature provides durability to resist cracking from thermal dimensional changes and normal subfloor deflection. Traditional cement grouts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

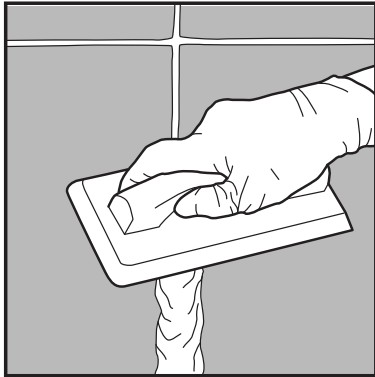
### Application

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. 18).



**FIGURE 18** Press grout firmly into the joint

Hold the float in a low angle and press firmly with short strokes at a right angle to 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. 19).

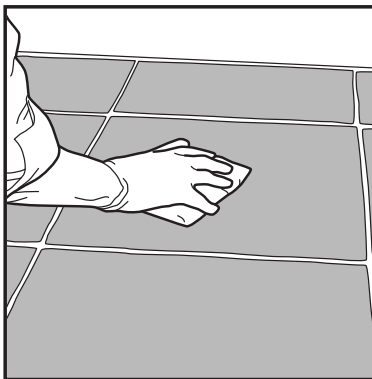


**FIGURE 19** Remove excess grout

### Initial Cleanup

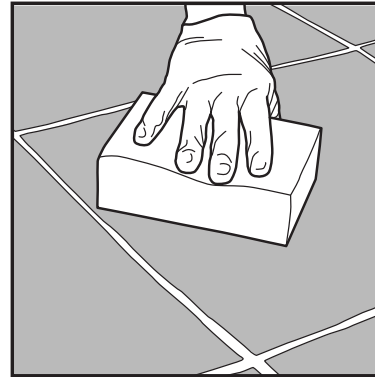
Initial cleanup should be done immediately after finishing each section. The faster the grout is removed from the tile, the easier it is to clean up. The DD01 Installation Accessory Kit contains the recommended cleaning pads and sponge to make clean-up easier.

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. 20).



**FIGURE 20** Use a white nylon pad to loosen grout on the surface of the tile

Use a firm square edge, cellulose sponge to remove the excess water solution. Use light pressure and wipe diagonally across the joints (Fig. 21).



**FIGURE 21** Use light pressure to remove the residue

Do not allow the water to flow into the non-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.

Open to light traffic for the next 24 hours. Resume normal traffic after 48 hours.

### IMMEDIATELY AFTER INSTALLATION

- If necessary, use lighter fluid, paint thinner or mineral spirits applied with a clean white cloth to remove scuffs marks and adhesive residue. Keep traffic off treated area for 30 minutes.

**CAUTION:** Lighter fluid, paint thinner and mineral spirits are flammable. Carefully read and follow cautionary information on label.

- Install the base moldings and fasten the trim to the wall not to the subfloor. Do not drive fasteners into the floor or underlayment.
- 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.
- Seal all areas that may be exposed to surface spills, i.e. tubs, toilet and showers with a high quality acrylic caulking.
- Return appliances and furniture to the room by rolling or sliding them over strips of hardboard.

## REPAIRS

For grouted floors, use a heat gun to warm the grout along one edge of the tile. The grout will soften when heated. The flooring can also soften when heated, so take care to avoid damage. Do not overheat. Be careful not to melt the flooring. Place a straight edge over the center of the grout line and cut the grout with a sharp utility knife (Fig. 22).

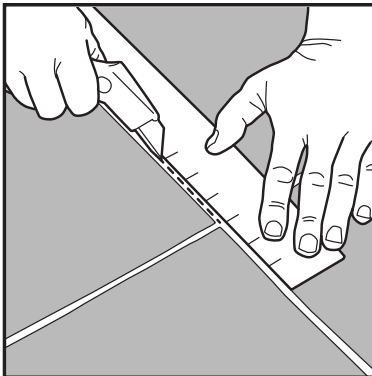


FIGURE 22 Cut grout while warm

Remove as much of the grout as possible using care to avoid 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. To remove the tile, use the heat gun to apply heat a few inches

in from the corner. While still warm, drive a putty knife or screwdriver into the heated area with a hammer (Fig. 23).

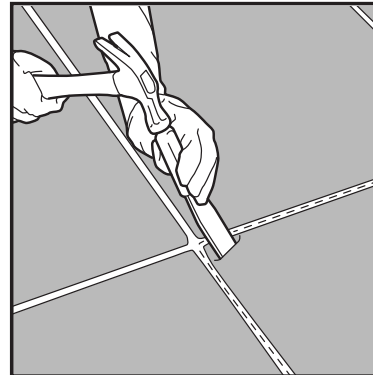


FIGURE 23 Avoid damaging the edges of the adjacent tiles

Pry upward to release the tile from the adhesive. Continue lifting and applying heat until it is completely removed. Use work gloves to protect hands from heat (Fig 24).

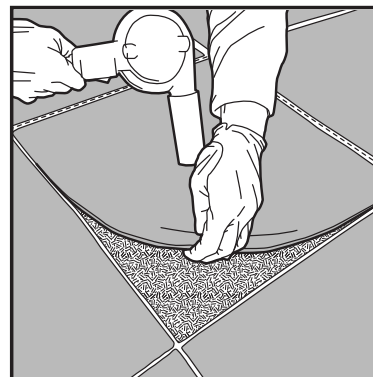


FIGURE 24 Use a heat gun to warm the tile and pry loose from the adhesive.

**NOTE:** If the subfloor or underlayment below the tile was damaged during the repair, it will be necessary repair that as well. Scrape off all of the remaining adhesive, prepare the area with a Portland cement-based patching compound to create a smooth surface and allow it to dry completely. The recommended adhesive should then be reapplied with the proper trowel.

Apply the recommended adhesive using the flat side of a trowel; it is not necessary to remove the old adhesive.

Follow the adhesive's recommended open time and then reinstall the new tile. Use spacers for grouted floors to maintain the grout line width.

Roll the tile with a steel hand 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.

## UNDERFLOR AND UNDERFLOR ACOUSTIC UNDERLAYMENT REPAIRS

Use the standard repair procedure outlined above to replace damaged tile installed over an UnderFlor underlayment. If the underlayment gets damaged during the repair, replace the damaged flooring and UnderFlor underlayment easily by following the procedure below:

Cut out the damaged tile by inserting a sharp utility knife blade between the damaged piece and the surrounding tile.

Cut through the underlayment, taking care not to cut into the surrounding flooring, and remove the damaged piece.

Place clear packing tape, adhesive side up, under the perimeter of the opening in the underlayment. Position the tape halfway under the flooring and underlayment, leaving the other half exposed.

Cut a piece of UnderFlor or UnderFlor Acoustic Underlayment to fit in the opening and secure it into the tape.

Apply the recommended adhesive with the proper trowel and allow to dry fully to a tack.

Insert a new tile into the adhesive and roll with a steel hand roller or 100 lb., three section steel roller.

The repair is complete and the floor can be walked on immediately.

## 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.

## 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.
- 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 DuraCeramic or DuraCeramic Dimensions.

**CAUTION: RESILIENT VINYL 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 OR FINISHES CAN ALSO CAUSE SLIPPERINESS.**

**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 STEAM CLEANERS ON RESILIENT VINYL FLOORS, THEY CAN PERMANENTLY DAMAGE THE SURFACE**