

# DuraCeramic<sup>®</sup>

Featuring



## Installation and Technical Guide



**Congoleum<sup>®</sup>**  
[www.congoleum.com](http://www.congoleum.com)

# 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.

- Read and follow the safety precautions and warnings printed on the label of the installation accessory products being used. Obtain the appropriate MATERIAL SAFETY DATA SHEETS (MSDS) for information that may be required for products which may contain hazardous materials. MSDS are available for the adhesive, joint sealer, and grout. You may obtain an MSDS for these products by calling or writing to your Congoleum distributor or contacting Congoleum at the address or phone number listed on this page.
- Wood and concrete: If working on wood or concrete subfloors, use proper safety precautions when sanding or grinding. Avoid creating dust. Concrete and cementitious patching compounds contain crystalline silica, which is a known carcinogen. Wood dust is classified as a nasal carcinogen in humans. Airborne wood dust may also be an explosive hazard.
- Resilient Flooring

## WARNING

Do not sand, dry sweep, dry scrape, drill, saw, beadblast, or mechanically chip or pulverize existing resilient flooring, backing, lining felt, asphaltic “cutback” adhesive, or other adhesive. These products may contain asbestos fibers and/or crystalline silica. Avoid creating dust. Inhalation of such dust is a cancer and respiratory tract hazard.

Smoking by individuals exposed to asbestos fibers greatly increases the risk of serious bodily harm. Unless positively certain that the product is a non-asbestos containing material, you must presume it contains asbestos. Regulations may require that the material be tested to determine asbestos content and may govern the removal and disposal of material. Whenever possible, existing flooring should be left in place and the new floor installed over the top. If you must remove old flooring material, contact your retailer or Congoleum Corporation, Installation Department, P.O. Box 3127, Mercerville, NJ 08619, for a copy of recommended work practices for the removal of resilient floor coverings. These practices should be followed.

## NOTICE

Various federal, state and local government agencies have regulations covering the removal of in-place asbestos containing material. If you contemplate 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 (RFCI) Recommended Work Practices for the Removal of Resilient Floor Coverings are available from:

Resilient Floor Covering Institute  
115 Broad Street  
Suite 201  
La Grange, GA 30240

Please note that the RFCI Recommended Work Practices are subject to change as new practices are incorporated. It is your responsibility to determine that the recommended work practices you use are those in effect.

## CAUTION: PAINTS CONTAINING LEAD

Certain paints may contain lead. Common renovation activities like sanding, cutting, removal of trim and demolition can create hazardous

lead dust and chips which can be harmful. Beginning April 22, 2010 contractors performing renovation projects, including preparation of an area to receive floor covering, that disturb lead-based paints in pre-1978 homes, child care facilities and schools must be certified and must follow specific work practices to prevent lead contamination. Detailed information on training and certification is available through the EPA at the following web site [www.epa.gov/lead/pubs/toolkits.htm](http://www.epa.gov/lead/pubs/toolkits.htm).

## 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. In virtually all situations, if there is a mold issue, there is or has been an excessive moisture issue. Visible signs of mold or mildew (such as discoloration) can indicate the presence of mold or mildew on the subfloor, on the underlayment, on the back of the flooring, and sometimes even on the floor surface. If mold or mildew is discovered during the removal or installation of resilient flooring, all flooring work should stop until the mold or mildew problem (and any related moisture problem) has been addressed.

In areas where flooding has occurred, it is recommended that damaged flooring be removed following the RFCI Recommended Work Practices for Removal of Resilient Floor Coverings (unless state or local law requires other measures). Any underlayment and subfloor should be allowed to thoroughly dry and, if necessary, cleaned, disinfected, and otherwise remediated consistent with the U.S. Environmental Protection Agency (EPA) guidelines referenced below. Any structural damage or signs of mold or mildew must be corrected before reinstalling resilient flooring. This may include, for example, replacement of the underlayment and/or subfloor.

For water damage caused by leaking fixtures, the source of the moisture leak must be located and corrected. Any structural damage must be repaired and any signs of mold or residual moisture must be addressed before replacing the resilient flooring in the affected area.

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 mold and mildew 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 at [www.epa.gov/iaq/molds/](http://www.epa.gov/iaq/molds/)

- Keep work areas free of obstructions, such as tools and scrap 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 mineral spirits as suggested in this guide, CAUTION: Miner-

als 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, kneepads, gloves, etc.

## DuraCeramic Origins, DuraCeramic Dimensions and Ovations

DuraCeramic Origins, DuraCeramic Dimensions and Ovations are constructed with a limestone composite base that is fortified with a polymeric resin. It provides toughness and flexibility to resist breaking from normal subfloor deflection, expansion and contraction. This feature permits fast, easy installation using a pressure sensitive adhesive over a wide variety of subfloor surfaces without extensive preparation.

### OVERVIEW

Use Congoleum DS100 DuraSet Adhesive, for all approved floor applications. Set tiles into tacky dry adhesive. Mortar, mastic or other adhesives are not recommended. Depending on the desired appearance, tiles can be installed with or without grout.

- **Grouted floor tiles** are laid with a 1/8" to 1/4" space at the joints depending on the desired grout line width. Congoleum DuraCeramic Premixed Grout can be applied immediately after tile is installed. Do not use cement epoxy or other premix grouts.
- **Ungrooved floor tiles** are laid with no space at the joints.

### INSTALLATION ACCESSORY MATERIALS

- DS100 DuraSet Adhesive – For all approved floor applications.
- DuraCeramic Premixed Grout – For joints on grouted floor tiles.
- DuraCeramic Installation Accessory Kit – For grouted applications.
- Congoleum UnderFlor – Floating Underlayment System
- Congoleum QuikStik UnderFlor – Pre-applied Adhesive Floating Underlayment System

### RECOMMENDED USE

DuraCeramic Origins and DuraCeramic Dimensions are recommended for residential and light commercial use in dry, interior, heated areas. Ovations is only recommended for residential use in dry, interior, heated areas.

### RESIDENTIAL

Recommended for use in all areas of the home except countertops, ceilings and wet areas like shower walls and shower floors.

### LIGHT COMMERCIAL

Recommended for areas receiving light commercial foot traffic.

DuraCeramic Origins and DuraCeramic Dimensions are not recommended for installation in exterior or unheated areas, wet areas, like shower walls or shower floors, countertops, ceilings, in commercial kitchens or food processing areas or on ramps. For information on other specific applications, contact the Congoleum Installation and Technical Office at (609) 584-3888.

### GENERAL INFORMATION

- Always store and transport cartons on a flat surface stacked no more than 10 cartons high. Handle tiles and cartons with care. Tiles can be damaged if dropped.
- Condition the room(s) and all flooring and setting materials 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 a room temperature between 55°F (13°C) and 100°F (38°C).
- When installing flooring from two or more cartons, check the code on

the side of the cartons to ensure that the pattern and shade numbers are the same. Mix tiles from several different cartons to achieve the best appearance.

- For best visual results: For DuraCeramic Origins the directional arrows printed on the back of the tile should be installed following the illustration in (Fig. 1), with tiles turned randomly, i.e. north, south, east and west.

For Ovations, install with directional arrows pointing in the same direction as shown in (Fig. 2). For DuraCeramic Dimensions, install all tiles with arrows pointing in the opposite direction following the illustration in (Fig. 3).

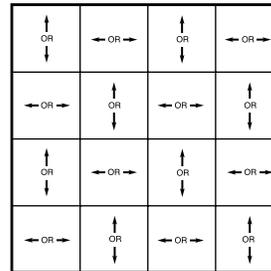


Fig. 1 - Turn tiles as shown.

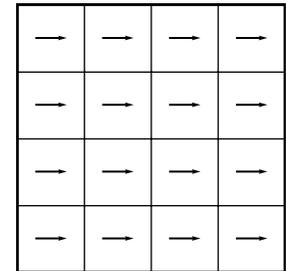


Fig. 2 - Arrows in the same direction.

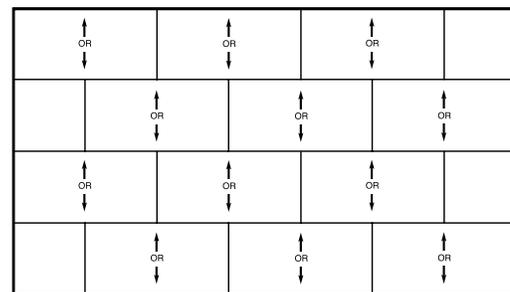


Fig. 3 - Install with arrows pointing in the opposite direction.

## Installation Accessories Information

	DS100 DuraSet Adhesive	DuraCeramic Premixed Grout			
Order Code	DS100	Use specific color code			
Description	Solvent free, acrylic, pressure-sensitive adhesive	Premixed sanded, acrylic grout			
Use	Installing tile over all approved floor surfaces	For use with DuraCeramic Origins, DuraCeramic Dimensions and Ovations in grouting joints 1/8" to 1/4" wide. Can also be used for grouting most ceramic, quarry and porcelain floor tile.			
Limitations	Not recommended for solid vinyl tile, rubber tile, or resilient sheet products.	Not recommended for nonvitreous tiles or natural stone, exterior use, shower floors or underwater use.			
Coverage	200 to 250 sq. ft. per gallon	Joint Width	Approximate Coverage		
			Sq. Ft./Qt.	Sq. Ft./Gal.	
			1/8" (3.2mm)	80 (7.4m <sup>2</sup> )	325 (31m <sup>2</sup> )
			3/16" (4.8mm)	70 (6.5m <sup>2</sup> )	275 (26m <sup>2</sup> )
		1/4" (6.4mm)	55 (5m <sup>2</sup> )	225 (21m <sup>2</sup> )	
Applicator	1/16" wide, 1/32" deep, 1/32" apart, trowel blade adapter included in 1 and 4 gallon containers only.	Hard rubber float or green epoxy float.			
Working Time	12 hours. Dry to tack - 45 to 60 min. under normal conditions.	10 minutes - for best results apply grout in a 20 sq. ft. area on floors and clean up immediately.			
Set Up Time	N/A	16 to 24 hours			
Clean Up	Wet - Soap and water Dry - Clean cloth dampened with mineral spirits.*	Wet - Water (DD001 Accessory Kit recommended) Dry - Household ammonia cleaner. Do not use grout haze removers.			
Color	Pale blue, turns clear when tacky dry	Popular versatile colors available			
Tracers	Dark Red	N/A			
Unit Size	1 quart; 1 gallon; 4 gallons	1 quart; 1 gallon			
Shelf Life	1 year if unopened	2 years, if unopened			
Freeze/Thaw Stability	Yes	Yes			
Flammable	No	No			
Cautions	Potential skin and eye irritant	Potential skin, eye and respiratory irritant			

DS100 - WARNING: Potential eye and skin irritant. DuraCeramic Premixed Grout - WARNING: Potential eye, skin and respiratory irritant.

\* Mineral spirits - Caution: Flammable material; read and follow cautionary statements on label.

# Product Information

## Specifications and Recommended Usage

Product Information	DuraCeramic Origins	DuraCeramic Dimensions	Ovations
Size (nominal)	15 5/8" x 15 5/8" (39.7 cm x 39.7 cm)	12" x 24" (30.48 cm x 60.96 cm)	14" x 14" (35.6 cm x 35.6 cm)
Gauge (nominal)	.160" (4.1 mm)	.160" (4.1 mm)	.140" (3.6 mm)
Packaging	10 pieces/carton; 17 sq. ft.; 1.58 m <sup>2</sup>	10 pieces/carton; 20 sq. ft.; 1.86 m <sup>2</sup>	15 pieces/carton; 20.4 sq. ft.; 1.90 m <sup>2</sup>
Shipping Weight	30.5 lbs./carton	36 lbs./carton	32.7 lbs./carton
NBS Smoke Density	Passes	Passes	Passes
Critical Radiant Flux (ASTM E648 >0.45w/cm <sup>2</sup> )	Passes	Passes	Passes
Motor Vehicle FMVSS 302	Passes	Passes	N/A
Static Load Limit	250 psi	250 psi	250 psi
Slip Resistance	Meets ADA Recommendations	Meets ADA Recommendations	Meets ADA Recommendations
PEI Rating	3-4	3-4	N/A
Installation Method	Grouted or Traditional Edge-to-Edge Fit (UngROUTED)	Grouted or Traditional Edge-to-Edge Fit (UngROUTED)	Grouted or Traditional Edge-to-Edge Fit (UngROUTED)
Subfloor Application	On, above or below grade level		
Adhesive	Congoleum DS100, AD32, DS100 DuraSet Adhesive (DS100 or AD32 can be used with Ovations)		
Grout	DuraCeramic Premix Grout	DuraCeramic Premix Grout	DuraCeramic Premix Grout
Suggested Usage	Residential/Light Commercial		Residential
Warranty	Residential - Lifetime Limited /Light Commercial - Five-Year Limited Commercial		Residential 20 Years

## Flooring Installations

### Special Installation Tools

- Notched trowel (1/16" wide, 1/32" deep, 1/32" apart)
- 100-pound, three-section, steel roller
- Grout tools and spacers for grouted applications
- 18" tile cutter - optional

### Subfloor Recommendations

DuraCeramic Origins, DuraCeramic Dimensions and Ovations may be installed directly over dry concrete on all grade levels, suspended wood, qualifying old resilient floors, ceramic tile and terrazzo. DuraCeramic Origins, DuraCeramic Dimensions and Ovations can also be installed over Congoleum UnderFlor or QuikStik UnderFlor, optional floating underlayment systems by Congoleum.

The surface must be clean, dry and free of dust, dirt, grease or other extraneous material that will inhibit bonding. Thoroughly vacuum floor to remove dust.

- Deviations in the flatness of the subfloor cannot exceed 1/16" in 1' or 3/16" in 10'. Check the surface with a straightedge and fill low areas with a portland cement-based latex patching compound. Gypsum-based patching compounds are not recommended.

- The use of a high-quality latex primer that is specifically designed to improve adhesion may be used over wood, porous concrete and patching compounds prior to adhesive application. The primer will help seal the surface and tie down dust that can interfere with the adhesive bond. Do not use paint primers.

### Concrete Floors

Concrete must be clean, dry, and free of paint, curing, hardening and parting compounds, sealers, and old adhesive residue. Moisture vapor emissions should not exceed, 5 lbs./1,000 sq. ft./24 hours when tested with the calcium chloride kit or 80% RH when tested using ASTM F2170 with a pH range between 5-9. Do not install DuraCeramic Origins, DuraCeramic Dimensions or Ovations over expansion joints; instead, cut the tile neatly to each side of the joint and fill it with an elastomeric polyurethane joint filler or cover with an expansion plate cover.

### Wood Floors

Wood subfloors must be structurally sound and free of movement with at least 18" of well-ventilated air space below. Single layer floors and stripwood floors must be covered with a 1/4" or heavier underlayment to achieve a total subfloor thickness of 1". Position underlayment joints so they offset the joints in the tile by at least 3". Sand underlayment joints level and fill gaps wider than 1/32" with the recommended patching compound.

## Subfloor Recommendations

Subfloor Construction/ Materials	Comments	Notes
Congoleum UnderFlor or QuikStik UnderFlor	<ul style="list-style-type: none"> <li>UnderFlor and QuikStik UnderFlor are underlayment systems for floating installations of DuraCeramic Origins, DuraCeramic Dimensions and Ovations over a variety of substrates in lieu of direct bonding. See detailed instructions on page 7.</li> </ul>	The subfloor system for floating surface must be smooth, solid and dry.
Wood	<ul style="list-style-type: none"> <li>Double layer construction over joist or trusses on 16" or 19.2" centers with at least 18" of well-ventilated air space.</li> <li>Install 1/4" or heavier underlayment over strip wood, single layer wood floors and APA-rated Sturd-I-Floor Systems.</li> </ul>	Subfloor must be solid and free of movement.
Underlayment	<ul style="list-style-type: none"> <li>APA underlayment grade plywood with fully sanded face.</li> <li>Hardwood and veneer underlayment panels.</li> <li>Lauan plywood, particleboard, oriented strand board and chipboard create a higher risk for installation and adhesive failure and are not recommended unless warranted by the panel manufacturer or supplier.</li> <li>Not recommended over cement backer-boards, glass mesh mortar units or acoustical cork.</li> </ul>	Install according to panel manufacturers' written instructions.
Concrete	<ul style="list-style-type: none"> <li>On, above and below grade level.</li> <li>Radiant-heated floors not to exceed 85°F (29°C).</li> </ul>	Moisture vapor emissions not to exceed 5 lbs. or 80% RH.
Light Weight Concrete (Residential Application only)	<ul style="list-style-type: none"> <li>Minimum 100-pound dry density</li> <li>Installation over gypsum-based acoustical toppings is not recommended unless Congoleum UnderFlor or QuikStik UnderFlor is used.</li> </ul>	Confirm adequate adhesion to substrate.
Resilient Floor (See WARNING on inside cover)	<ul style="list-style-type: none"> <li>Smooth, non-cushioned sheet flooring and vinyl composition tile.</li> <li>Embossed non-cushioned and thin cushioned vinyl flooring can be prepared with embossing leveler in residential applications.</li> <li>Do not install over soft, heavy cushioned floors, flooring with a cushioned backing, self-adhering tile or tile installed below grade level.</li> </ul>	Must be single layer, fully adhered and well bonded. Remove wax or polish.
Ceramic and Stone	<ul style="list-style-type: none"> <li>Ceramic, marble and granite.</li> </ul>	Fill grout joints and level floor.
Carpet/ Laminate	<ul style="list-style-type: none"> <li>Not recommended.</li> </ul>	Remove
Patching Compound	<ul style="list-style-type: none"> <li>Portland cement-based compound such as Ardex Feather Finish, Mapei Plani-Patch or equal.</li> <li>Gypsum-based patching compounds are not recommended.</li> </ul>	Refer to manufacturers' instructions for use and applications.

## Congoleum UnderFlor

UnderFlor is an all-in-one underlayment system that provides an economical solution for installing DuraCeramic Origins, DuraCeramic Dimensions and Ovations as a floating flooring system over a variety of subfloor surfaces. Now, one underlayment covers it all; wood, concrete, most old hard surface flooring, gypsum topping, even old adhesive residue and painted surfaces.

Congoleum UnderFlor is constructed in 6' wide rolls, and since it is a floating underlayment, it requires no fasteners or special tools so it's quick and easy to install.

### Roll Sizes

UF120 – 6' x 180' (120 sq. yds. or 1080 sq. ft.)

UFB07 – 6' x 16.7' (11.11 sq. yds. or 100 sq. ft.)

### Recommended Use

- Residential applications on all grade levels
- Interior use in dry, heated areas
- Do not install over ramps, in showers or other wet areas

### General Information

- Always roll sheets of Congoleum UnderFlor tightly around a tube with the vinyl side out for storing and transporting. Avoid distorting Congoleum UnderFlor.
- Condition the room and all flooring materials at a constant temperature between 65°F (18°C) and 85°F (29°C) for 48 hours prior to, during and 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. Undercut door casing and slide finished flooring under for a finished appearance.
- Use DS100 Adhesive only for installing Congoleum DuraCeramic Origins, DuraCeramic Dimensions and Ovations over Congoleum UnderFlor. Hard setting adhesives should not be used with Congoleum UnderFlor.

### Congoleum UnderFlor Installation

Install Congoleum UnderFlor with the vinyl side down just prior to installation of finished flooring. Determine the appropriate seam location and direction of the underlayment (depending on the finished flooring selection).

### Important

For tile installation, position UnderFlor with seams at least 4" away from the joints in the finished floor tile. (Fig. 4).

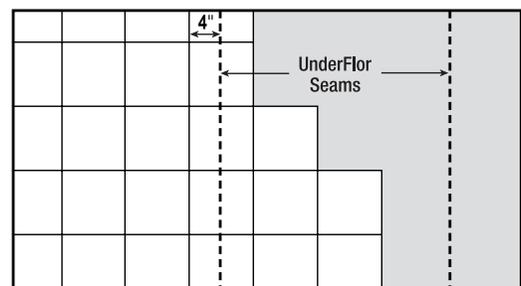


Fig. 4 – Position seams at least 4" away from tile joints.

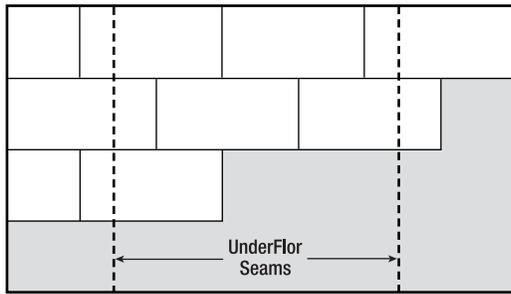


Fig. 5 – Install UnderFlor with seams perpendicular to the long dimension of the DuraCeramic Dimensions flooring.

For DuraCeramic Dimensions always install UnderFlor with seams running perpendicular to the long dimension of the tile flooring (Fig. 5). Install tiles with staggered end joints positioned at least 4" away from the seams in the Congoleum UnderFlor.

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. If necessary, to adjust the seam location to ensure proper placement, overlap the sheets and double-cut a new seam in the desired location. Use a straightedge and utility knife to cut the seam.

Tape the sheets together with 2" wide clear packaging 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 Congoleum UnderFlor.

### Installing DuraCeramic Origins, DuraCeramic Dimensions and Ovations over Congoleum UnderFlor

Follow installation instructions for the finished flooring being installed. Install finished flooring with Congoleum DS100 DuraSet Adhesive using the recommended trowel notch size. Do not apply excess adhesive. Allow adhesive to dry completely to a tack prior to flooring installation. Slight growth (buckles) in the UnderFlor may occur immediately after adhesive application. This is normal and will not affect the finished flooring installation. Install finished flooring allowing a 1/8" to 1/4" space around the entire perimeter. If necessary to adjust or remove a tile, use a heat gun to warm it up first. Roll finished flooring on completion of the installation.

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 silicone caulking.

## Congoleum QuikStik UnderFlor

The fastest, most cost effective floating floor installation system - just roll it out, peel back the release liner and start installing the floor. Install under DuraCeramic Origins, DuraCeramic Dimensions and Ovations.

- No messy adhesive to spread
- No trowel or 100 lb. roller needed
- No waiting for glue to tack up
- Installs easily on top of a variety of subfloors/conditions
- No adhesive waste
- Easy to reposition product and make repairs
- Allows for "dry fitting" when making cuts
- Moisture and alkali resistant
  - Install over concrete with vapor emissions up to 5 lbs. or 80% RH
  - Great for basements and new construction

### Roll Sizes

Large Roll Order Code: QSUFL

Contents: 1 roll 56.25" wide x 60 lin. ft. (281.25 sq ft) plus 1 roll tape (1.89" x 60 lin. ft.)

Small Roll Order Code: QSUSC

Contents: 1 roll 56.25" wide x 30 lineal feet (140.63 sq. ft.) plus 1 roll tape (1.89" x 30 lin. ft.)

### Recommended Use

- Residential applications on all grade levels
- Interior use in dry, heated areas
- Do not install over ramps, in showers or other wet areas

### General Information

- Always ensure QuikStik Underflor is tightly rolled around a tube with the release liner out for storing and transporting. Any unused portion of the roll must be tightly secured around the tube.
- Do not distort QuikStik Underflor.
- Condition the room and all flooring materials at a constant temperature between 65°F (18°C) and 85°F (29°C) for 48 hours prior to, during and 48 hours after installation.
- All QuikStik Underflor and finished flooring must be installed with a 1/8" to 1/4" space around the perimeter of the room to allow for expansion and contraction of the flooring system and subfloor.

### QuikStik Underflor Installation

- Thoroughly sweep the floor.
- Determine the appropriate seam location and direction of the underlayment (based on the flooring selection).

**Important:**

For tile installation, QuikStik Underflor must be positioned in the room with seams at least 4" away from the joints in the finished floor tile. (Figure 1).

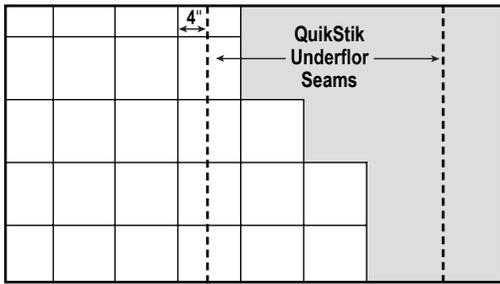


Fig. 1 – Position QuikStik Underflor seams at least 4" away from tile joints.

For DuraCeramic Dimensions always install QuikStik UnderFlor with seams running perpendicular to the long dimension of the tile flooring (Fig. 2). Install tiles with staggered end joints positioned at least 4" away from the seams in the Congoleum QuikStik UnderFlor.

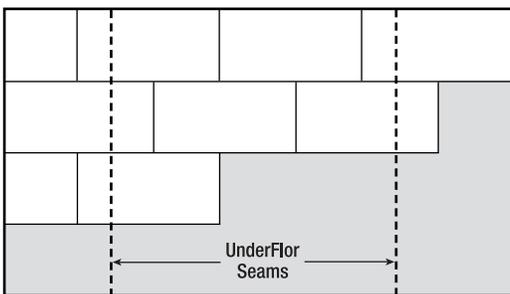


Fig. 2 – Install QuikStik UnderFlor with seams perpendicular to the long dimension of the DuraCeramic Dimensions flooring.

- Install QuikStik Underflor with the felt side down.
- Unroll the first sheet and trim to fit allowing 1/8" to 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 against the first sheet.
- The pre-applied adhesive layer stops about 1 1/8" from each edge. This allows you to butt the edges together and apply the double face tape (included in the carton) along the edges without having to pull back the release liner.
- Always roll the seam tape with a hand roller to firmly embed it.
- Minor rips or tears can easily be fixed by simply pulling back the release liner on either side of the tear and applying a piece of the seam tape to the torn area.

## Congoleum UnderFlor & QuikStik UnderFlor Substrate Recommendations

UnderFlor & QuikStik UnderFlor can be installed over the following surfaces:

Subfloor Construction/ Materials	Comments	Notes
Wood Structure	<ul style="list-style-type: none"> <li>• Double layer construction over joist or trusses on 16" or 19.2" centers.</li> <li>• Single layer floors constructed with APA Rated Sturd-I-Floor T&amp;G Panels, minimum 23/32" over joists or trusses on 19.2" centers.</li> </ul>	Subfloor must be smooth solid and free of movement with at least 18" of well ventilated air space below.
Underlayment	<ul style="list-style-type: none"> <li>• APA underlayment grade plywood.</li> <li>• Oriented Strand Board (OSB)</li> <li>• NPA rated Particleboard</li> </ul>	Weather damaged or rough surface materials must be sanded smooth. Gaps wider than 1/8" should be filled level.
Concrete	<ul style="list-style-type: none"> <li>• On, above and below grade level.</li> <li>• Radiant-heated floors not to exceed 85°F (29°C).</li> </ul>	Moisture vapor emissions not to exceed 5 lbs. or 80% RH. Fill depressions and cracks wider than 1/8".
Gypsum Topping and Light Weight Concrete	<ul style="list-style-type: none"> <li>• Minimum 100-pound dry density</li> <li>• Minimum 3,000 psi compression rating is required.</li> </ul>	Fill depressions and cracks wider than 1/8".
Resilient Floor	<ul style="list-style-type: none"> <li>• Smooth, or textured sheet flooring</li> <li>• Vinyl composition tile</li> <li>• Do not install over soft, heavy cushioned floors, flooring with a cushioned backing or tile installed below grade below.</li> </ul>	Must be single layer, fully adhered and well bonded.
Ceramic and Stone	<ul style="list-style-type: none"> <li>• Ceramic, marble and granite.</li> </ul>	Fill grout joints and level floor.
Old Adhesive and Residue and Paint	<ul style="list-style-type: none"> <li>• Adhesive Residue - Scrape to remove heavy spots and cover with a 4 mil sheet of poly film.</li> <li>• Paint - Remove loose paint.</li> </ul>	Follow recommended work practices for adhesive and paint removal.

## DURACERAMIC INSTALLATION

### Tile Layout

- Layout is slightly different for grouted and ungrouted floors. The grout line width must be added to the tile dimension for layout on grouted floors. Additional chalk lines are also used to keep the joints straight. DuraCeramic Origins nominal tile size is 15 5/8" x 15 5/8". DuraCeramic Dimensions nominal tile size is 12" x 24". Oventions nominal tile size is 14" x 14".
- It is important to avoid positioning the tile joints directly over underlayment joints or seams in UnderFlor or existing flooring. If this should occur, reposition chalk lines to offset joints by at least 3" or half of the tile dimension.

	DuraCeramic Origins (15 5/8" x 15 5/8")	DuraCeramic Dimensions (12" x 24")	Ovations (14" x 14")
Square or Straight	Yes	Yes	Yes
Diagonal	Yes	No	Yes
1/2 Drop	Yes	Yes	Yes
1/3 Drop	No	Yes	No
Paver	No	Ungrouted only	No
Herringbone	No	Ungrouted only	No

### Basic Square Layouts

- Place a mark in the center of the floor at each end of the room. (AB) Then snap a chalk line between the marks.
- Find the center of the line and snap a second chalk line at a right angle (CD); use the 3', 4', 5' method to form a right angle (Fig. 6).

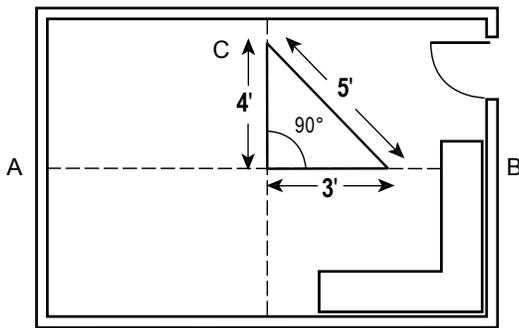


Fig. 6 - Square layout.

- Make a dry layout in one quadrant along the center and perpendicular chalk lines. Remember to allow the desired grout line space between the tiles. A story pole (board marked with tile dimensions, including grout line width) can also be used in place of a dry layout.
- Measure the distance between the last whole tile and the wall. If the distance is less than half a tile, snap a new chalk line one-half the dimension of a full tile away from the original chalk line (Fig. 7). This will provide a balanced layout with larger cut tile at the border.

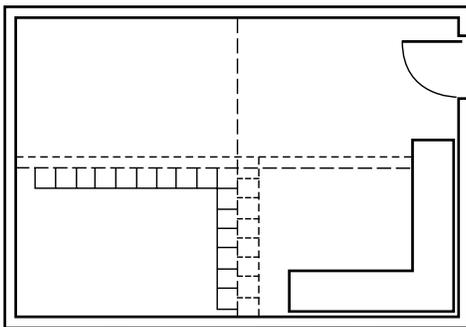


Fig. 7 - Adjust layout at center lines for larger border tiles.

- When installing DuraCeramic Dimensions in a 1/2 drop layout or a 1/3 drop layout it will be necessary to snap additional chalklines for starting locations. First complete a basic square layout with center and perpendicular lines. Normally the tiles are laid with the long dimension parallel with the long dimension of the room.

### 1/2 Drop Layout

- Snap a second perpendicular chalkline 12" away from the first perpendicular line (Fig. 8). Complete a dry layout in the first 2 rows starting from the perpendicular chalklines. If the border tile in either row is less than 6", adjust the perpendicular lines 6" in either direction.

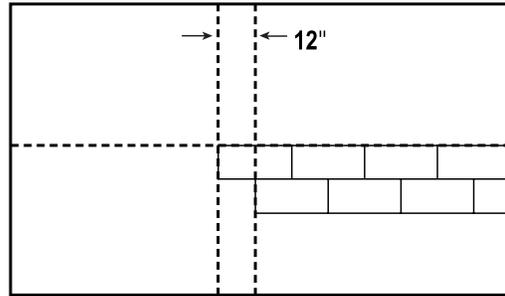


Figure 8 - 1/2 Drop Layout.

### 1/3 Drop Layout

- Snap two additional chalklines, one 8" and the other 16" away from the center perpendicular line (Fig. 9). Complete a dry layout in the first 3 rows starting from the center perpendicular chalkline. If the border tile in any of the 3 rows is less than 4", adjust all three perpendicular lines 4" in either direction.

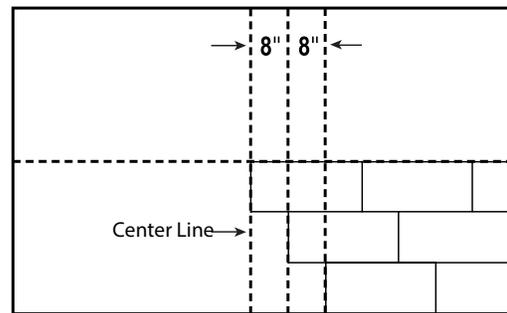


Figure 9 - 1/3 Drop Layout.

**Note:** Chalk lines can be easily removed or difficult to see after applying adhesive over some subfloor surfaces like old flooring and concrete. To avoid losing the lines, mark the subfloor with a pencil and a straightedge, directly over the chalk lines.

### Adhesive Application

Congoleum DS100 DuraSet Adhesive and AD32 Adhesive (for Ovations) are pressure-sensitive adhesives that must be allowed to dry completely to a tack before setting tiles.

- Apply the adhesive with the trowel blade adaptor included with the adhesive. The recommended trowel notch size is 1/16" wide, 1/32" deep, 1/32" apart.
- Spread the adhesive over one-half of the subfloor and a few inches beyond the center chalk line.
- Allow the adhesive to dry completely to a tack before installing the tile. Normal dry to tack time is about 45 to 60 minutes; longer in cool or humid conditions. The adhesive will turn from light blue to clear when tacky dry and will not transfer to the finger when firmly touched. Do not use fans to accelerate adhesive drying time. Fan drying can cause the top surface of the adhesive to dry prematurely, trapping residual moisture in and preventing the adhesive from fully curing.
- Tile must be installed within 12 hours after adhesive turns clear.

### Setting Floor Tiles

- Carefully position the first tile into the adhesive at the intersection of the chalk lines (Fig. 10). The tile will bond instantly on contact so it must be positioned accurately without sliding it. Press the tile firmly into the adhesive. Follow the procedures below for grouted and ungrouted floors.

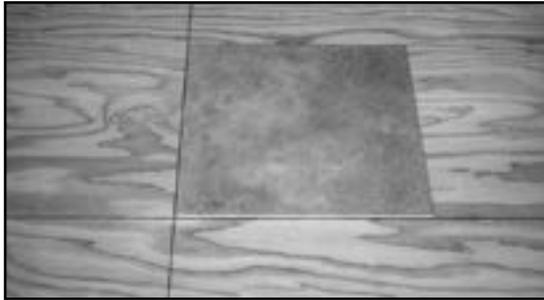


Fig. 10 - Positioning tiles.

### Grouted Floors

- The desired grout line width should be determined prior to starting the flooring installation. It is important to understand that the finished grout line will be 1/16" to 3/32" wider than the space between the tiles, since the grout will extend onto part of the radius along the top edge of the tile (Fig. 11).

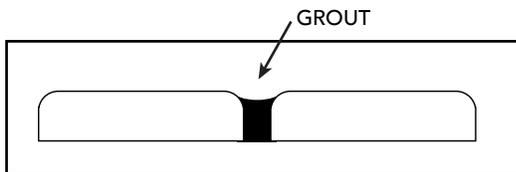


Fig. 11 - The finished grout line width is wider than the space between the tiles.

Spacer Size	1/8"	3/16"	1/4"
Actual Grout Line Width	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 DuraCeramic or 1/8" 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 remove one leg of the spacer (Fig. 12) otherwise it will interfere with positioning the tile. 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.



Fig. 12 - Use spacers with one leg removed.

- Position two spacers along the edge of adjacent tiles, then lay the next tile gently against the spacers without forcing it into place (Fig. 13). Continue to set the tiles in straight rows to complete each section (Fig. 14). Follow the chalk lines to keep the joints straight and make minor adjustments if necessary. Remove the spacers immediately after setting each tile.



Fig. 13 - Position spacers before setting the tile.



Fig. 14 - Set tile in straight rows.

### Ungouted Floors

- When installing an ungrouted floor, continue setting the tiles in a stair-step pattern along the center and perpendicular lines (Fig. 15). Hold the tile in a low angle to the floor and position it tightly against the previously laid tile. Press it firmly into the adhesive. Continue working toward the walls to complete the first quadrant before starting the next. Check to make sure corners are lined up and adjust if necessary to prevent run-out.



Fig. 15 - Install ungrouted floors following a stair-step pattern.

## Grouted and UngROUTED Floors

- Spread the adhesive on the second half of the floor so it can dry while you are cutting and fitting the last row of tiles along the wall. Complete the second half of the room following the same procedures.
- Roll the floor slowly, in both directions, with a 100-pound, three-section roller within one hour after setting the tiles (Fig. 16). Re-roll the entire floor immediately before grouting or applying joint sealer.



Fig. 16 - Roll the floor within one hour after setting tiles.

## Cutting Tile to Fit

The last row of tiles will need to be cut to fit to walls and other vertical surfaces. (Remember to subtract the grout line dimension for grouted floors). Allow a 1/8" space for expansion between the edge of the tile and the wall.

### Straight Cuts

- Measure the distance between the last whole tile and the wall. Subtract the dimensions for the grout and expansion space. Use this dimension to mark the tile.
- Place a square or straightedge over the marks and score the surface with a sharp utility knife. Break the tile over the score mark by flexing it downward.
- Install the tile with the cut edge against the wall.

### Irregular Shapes

- Scribe the tile to fit.
- Warm the tile with a hot air heat gun. Score the surface with a sharp utility knife and break the tile over the score mark by flexing it downward or cut the tile with a coping saw.

## CUSTOM FLOOR INSTALLATIONS

**Diagonal Layouts** (For DuraCeramic Origins and Ovarions ONLY, not for use with DuraCeramic Dimensions)

- Lay out the center and perpendicular lines as previously described for a square layout. Place a mark on each line an equal distance away from the center point (distance from center is arbitrary).
- Use a slightly larger arbitrary size and swing an arc on both sides of each line from points E, F, G, H (Fig. 17). Snap diagonal chalk lines at the point where the marks intersect. If done correctly, the chalk lines will intersect at the center point.

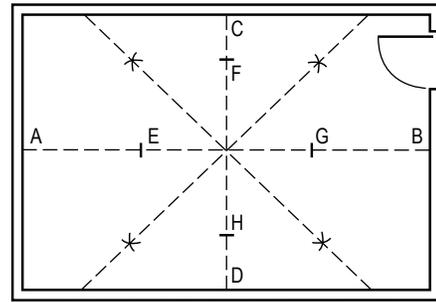


Fig. 17 - Diagonal Layout.



- Make a dry layout in one quadrant along the center and perpendicular chalk lines.
- 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. 18). This will provide a balanced layout with larger cut tile around the perimeter.

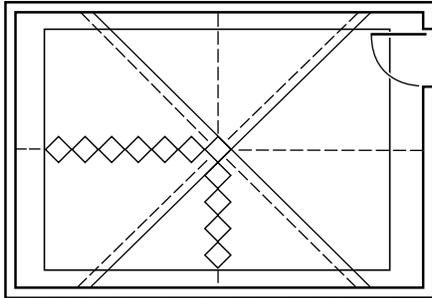


Fig. 18 - Adjusting chalk lines for a diagonal layout.

### Herringbone Layout for UngROUTED DuraCeramic Dimensions Only

- The Herringbone layout requires only a basic square layout with a center and perpendicular chalkline. Complete a dry layout starting at the intersection of the chalklines to determine the size of the cut border tile. If the border tile is less than 6" adjust the chalkline 6" in either direction.

**Tip:** Spread adhesive in 3 quadrants (starting quadrant and adjacent quadrants) when installing a herringbone layout (Fig. 19).

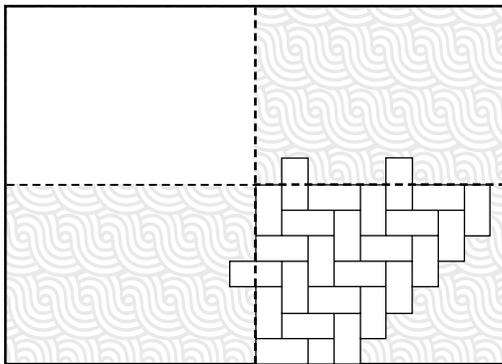


Fig. 19 - Adjust the chalkline 6" in either direction if necessary to achieve a larger border tile. After completing dry layout spread adhesive in 3 quadrants.

### Installing Borders and Insets

- Borders can be created easily by using an accent color or different size tile on a square layout. 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 is necessary to prepare the cut edge of the diagonal tile where it meets the border.

### Finishing Cut Edges for Borders and Insets

- When installing tile with a diagonal layout and a square border, it will be necessary to prepare the cut edge of the diagonally cut tile. First cut the tile to the desired size. Then heat the cut edge and back of the tile with a heat gun to soften it. Place the tile on a flat surface and roll the edge with a steel hand roller to turn the edge downward, forming a slight radius (Fig. 20). Allow the tile to cool before installing it.



Fig. 20 - Roll the cut edge to form a slight radius.

## GROUT APPLICATION

### Grouting Floors

- DuraCeramic Origins, DuraCeramic Dimensions and Ovations can be grouted immediately or within 24 hours after setting the tiles.
- Tiles must be grouted using DuraCeramic Premix Grout. This exclusive premixed acrylic 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 sub-floor deflection. Traditional cement grouts are not recommended and will not perform properly.

### Grout Application

#### Tools and Equipment

- Hard, green, rubber epoxy float
- DuraCeramic Accessory Installation Kit DD01 containing:
  - Firm, square-edge sponge
  - 2 - 3M® white nylon scrubbing pad
- Spray bottle of water
- Water buckets
- Rubber gloves
- Safety glasses

Soft grout floats and soft sponges are not recommended because 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 with mineral spirits 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. 21). Hold the float in a low angle and press firmly with short strokes at a right angle to the joint.



Fig. 21 - Pack the grout into the joints.

- Extend the grout a few inches in to the next row of tile so water does not run into the unfinished joints during cleanup (Fig. 22).



Fig. 22 - Extend grout a few inches into the next row.

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.

### 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 DuraCeramic installation accessory kit contains the recommended 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. 23).



Fig. 23 - Use a 3M white, nylon pad to loosen grout residue.

- Use a firm square edge sponge to remove the excess water solution. Use light pressure and wipe diagonally across the joints (Fig. 24). Do not allow the water to flow into the ungrouted joints or accumulate in finished areas.



Fig. 24 - Wipe diagonally across the joint to remove excess water.

- 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.

### IMMEDIATELY AFTER INSTALLATION

- Install or replace base moldings and 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.

### REPAIR

DuraCeramic Origins, DuraCeramic Dimensions and Ovations 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.
- Place a straight edge over the center of the grout line and cut the grout with a sharp utility knife (Fig. 25).



Fig. 25 - Cut along the center of the grout line after heating it.

- Remove as much of the grout as possible using care to avoid cutting into the edge of the adjacent tile. 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).



Fig. 26 - Drive a putty knife into the heated area and pry upward.

- Then, pry upward to release the tile from the adhesive. Continue lifting the tile as you heat it until it is completely removed.
- To install the new tile, re-apply DS100 DuraSet 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 DuraCeramic Grout following label instructions. Allow grout to dry for 24 hours and remove any remaining grout haze.

#### UngROUTED Tile Floors

- If applicable, use a utility knife and carefully cut through the joint sealer using care to avoid cutting into the adjacent tiles.
- Follow the same procedure for Grouted Floors to remove the tile and re-adhere the replacement tile.

#### Congoleum UnderFlor Repair Techniques

Repair techniques are very easy on Congoleum UnderFlor installations. Use these procedures for repairs for DuraCeramic Origins, DuraCeramic Dimensions or Ovations installed over Congoleum UnderFlor.

##### UngROUTED Repair

- Carefully score the tile to be removed across the corner edge about 1 inch from the corner.
- Apply heat to the area.
- Using a putty knife and hammer, position the putty knife over the scored edge and tap it until the corner is released.
- Apply heat as you go and carefully begin to pry up the piece from the Congoleum UnderFlor using a putty knife. If you keep the tile heated, it should release without damaging the UnderFlor.
- When the piece has been removed, check the adhesive tack. If it is still tacky to the touch, simply position the new piece in place.
- If the adhesive is not tacky, reapply adhesive with the flat side of the trowel and let it tack up. Then set the replacement piece into place.
- Roll the replacement piece with a roller.

##### Grouted Repair

- Use a heat gun to warm the grout.
- Using a sharp utility knife, carefully score the joint, cutting through the grout. Make sure that you do not apply a lot of pressure because you do not want to cut into the Congoleum UnderFlor. Carefully score the tile to be removed across the corner edge about 1 inch from the corner.

- Apply heat to the area.
- Using a putty knife and hammer, position the putty knife over the scored edge and tap it until the corner is released.
- Apply heat as you go and carefully begin to pry up the piece from the Congoleum UnderFlor using a putty knife. If you keep the tile heated, it should release without damaging the UnderFlor.
- When the piece has been removed, check the adhesive tack. If it is still tacky to the touch, simply position the new piece in place.
- If the adhesive is not tacky, reapply adhesive with the flat side of the trowel and let it tack up. Then set the replacement piece into place.
- Roll the replacement piece with a roller.
- Re-grout the tile with DuraCeramic grout following label instructions. Allow grout to dry for 24 hours and remove any remaining grout haze.

#### Replacing the Congoleum UnderFlor

If the Congoleum UnderFlor is cut or damaged during the repair procedure and needs to be replaced, follow these procedures.

- Using the piece that was removed as a template, cut a fill piece of Congoleum UnderFlor.
- Slide pieces of thin, clear, sticky, one-sided packaging tape centered under the cut out edges.

Tip: Here's a tip to make it easier to slide the tape under the edges. Cut the piece of tile that was removed to make it about 1 inch shorter. Cut the thin packaging tape to that dimension. Carefully fasten the tape along the edge of the product overlapping it about 1/4 inch. Turn the piece over so that the tape is now sticky side up and slide it under the cut out edge. Firmly press down on the edge and pull the replacement piece away to release the tape.

- Carefully lay in the new cut piece of UnderFlor pressing it firmly onto the tape.
- Apply DS100 adhesive to the Congoleum UnderFlor and allow it to tack up.
- Lay in the replacement flooring and roll it to set it in place.
- Roll the replacement piece with a roller to set it.
- Re-grout the tile to finish the repair.

#### QuikStik UnderFlor Repair

Repairs are very simple. To replace a damaged tile:

- Warm the piece with a heat gun.
- Use a sharp utility knife to cut through a corner of the damaged piece taking care not to cut into the QuikStik UnderFlor.
- Lift the end of the piece and continue heating.
- As you provide sufficient heat, the piece will release from the adhesive.
- Lift out the entire piece and warm the exposed adhesive.
- Install the new piece and set it firmly into place with a hand roller.

#### PREVENTIVE CARE

- Make sure furniture legs have large surface, nonstaining 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, nonstaining 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 nonstaining hard rubber treads at least 3/4" wide. Do not use ball-shaped casters.
- Place mats at outside entrances to prevent dirt, grit and soil from being tracked onto your floor.

Caution: DuraCeramic Origins, DuraCeramic Dimensions and Ovations, 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 your floor. Improper 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 Congoleum 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 polish to DuraCeramic or DuraCeramic Dimensions. Floor Polish use is optional for Ovations.