

X. INSTALLATION OF DURASTONE

A. SPECIFICATIONS/RECOMMENDED USE – DURASTONE PRODUCTS

The following are specifications and other information which will be helpful when installing Congoleum DuraStone products:

Specifications/Recommended Use DuraStone Products

Size (nominal)	16" x 16"
Gauge (nominal)	.160"
Packaging per Carton	10 pcs./carton (17.77 sq. ft.)
Weight per Carton	34 lbs./carton
NBS Smoke Density	Passes
Critical Radiant Flux (ASTM E648 > 0.45w/cm ²)	Passes
Motor Vehicle FMVSS 302	Passes
Static Load Limit	250 psi
Slip Resistance	Meets ADA Recommendations
PEI Rating	3-4
Installation Method	Full Spread
Subfloor Application	On, above, or below-grade level
Adhesive	Congoleum DS100 DuraSet Adhesive
Adhesive Sizes	1 quart; 1 gallon and 4 gallon
Adhesive Spread Rate	200 to 250 sq. ft. / gallon
Recommended Trowel	1/16" w x 1/32" d x 1/32" apart
Suggested Usage	Residential and Light Commercial

DuraStone is recommended for residential and light commercial use in dry, interior heated areas.

1. RESIDENTIAL

DuraStone is recommended for use in all areas of the home.

2. LIGHT COMMERCIAL

DuraStone is recommended for use in areas receiving light commercial foot and wheel traffic:

Retail

- Specialty Shops
- Beauty Salons
- Clothing and Apparel Shops
- Boutiques

Office

- Lobby
- Reception Area
- Conference Room
- Lounge
- Offices
- Restrooms

Health Care

- Doctors' Offices
- Dental Offices

Hospitality

- Dining Areas
- Hospitality Rooms
- Lounges
- Guest Rooms

Educational

- Administrative Lounges
- Dormitory Rooms

Notes:

DuraStone is not recommended for installation in exterior or unheated areas, wet areas, commercial kitchens or food processing areas or on ramps. For information on

other specific applications, contact the Congoleum Installation and Technical Department at 609-584-3888. Areas receiving more concentrated traffic and or routine spills should be protected with floor polish and a regular maintenance schedule should be followed.

B. GENERAL INFORMATION

- Install DuraStone with Congoleum DS100 DuraSet Adhesive.
- Proper storage and handling is critical to ensure tiles do not become distorted prior to installation. Always store and transport cartons on a flat surface stacked no more than 10 cartons high.
- The importance of proper temperature at the time of installation cannot be over-emphasized. Do not install at a temperature higher than 85°F (29°C). 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 (Figure 147).



Fig. 147. Condition materials at room temperature before installation.

Thereafter, maintain a room temperature between 55°F (13°C) and 100°F (38°C). **NOTE: Exposure to extreme temperature variations can cause thermal expansion or contraction resulting in edge curl or gaps between tile.**

- When installing tile 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 cartons to achieve the best appearance. When arrows are printed on the back of each tile, install tile with arrows pointed in the same direction unless specifically instructed otherwise on a separate insert found in the carton. Perimeter grout lines will vary in width from tile to tile. This variation has been designed into the floor to create a more realistic visual of a hand-set tile.

C. SUBFLOOR REQUIREMENTS

- DuraStone may be installed over dry concrete on all grade levels, suspended wood floors and qualifying old, smooth, resilient floors that are fully adhered and securely bonded.

- **Deviations in the flatness of the subfloor cannot exceed 1/16" in 1' or 3/16" in 10'.** This is particularly important when installing over a cold concrete subfloor since the tile will be stiffer at low temperatures.
- See **SECTION II. SUBFLOOR AND UNDERLAYMENT RECOMMENDATIONS** for subfloor types and preparation information.

D. FLOOR LAYOUT

There are 2 basic layouts: square or diagonal. Two or more colors from the same or coordinating product lines can be mixed or matched to create virtually unlimited custom design effects. Straight borders with diagonal layouts are not recommended.

It is important to avoid positioning tile joints directly over underlayment joints or seams in existing floor coverings. If this should occur when laying out the installation, reposition the chalk lines.

1. SQUARE LAYOUTS

Place a mark in the center of the floor at each end of the room. Snap a chalk line down the center of the floor to connect the marks (AB as shown in Figure 148).

Find the center of the line and snap a second chalk line at a right angle (CD as shown in Figure 148); use the 3', 4', 5' method to form a right angle.

Starting at the center of the room, lay a row 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 one-half of a tile, establish a new center line (or lines) one half the dimension of a full tile (Figure 149).

When installing tile in irregular shaped rooms, check the size of the last tile along all walls and adjust the center lines (if necessary) to achieve the best layout. Begin laying the tile in the center of the room following the chalk lines made on the floor.

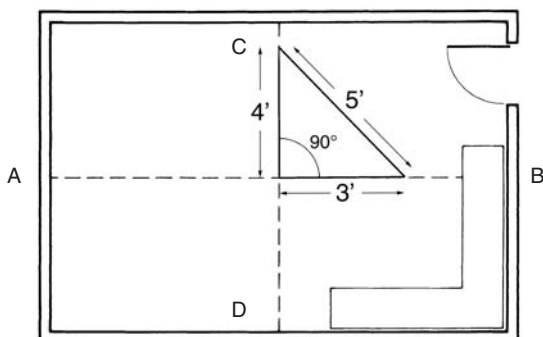


Fig. 148. Square layout.

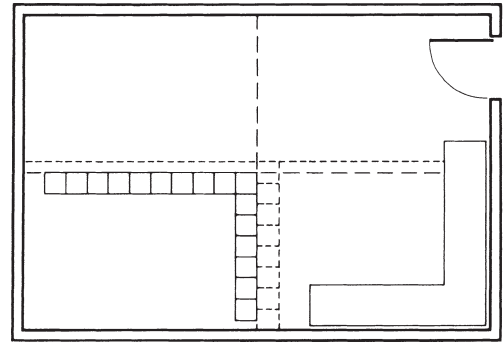


Fig. 149. Adjust tile layout at center lines if less than one-half tile at walls.

2. DIAGONAL LAYOUTS

Lay out the center and perpendicular lines as in a square layout. Place a mark on each line an equal distance away from the center (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 and H (Figure 150). Snap diagonal chalk lines at the point where the marks intersect. If done correctly, the chalk lines will intersect the center point.

Starting at the center of the room, lay a row of loose tiles along the chalk lines to one end wall and one side wall. If the distance between the corner of the last full tile and the wall is less than one-half of a tile, establish a new center line (or lines) to achieve the best layout with larger cut tiles (Figure 151).

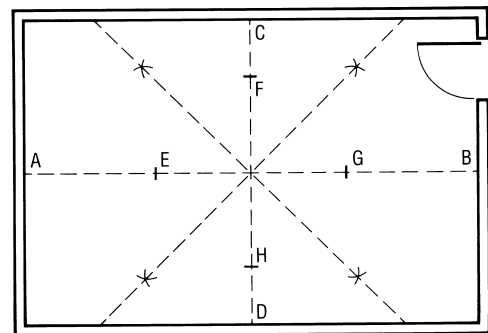


Fig. 150. Diagonal layout.

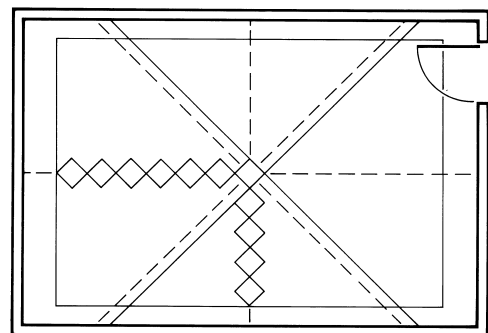


Fig. 151. Snap new diagonal chalk lines.

E. ADHESIVE INFORMATION

- Congoleum DS100 DuraSet Adhesive applied with a properly notched adhesive trowel is required for installing DuraStone over all approved subfloor surfaces (Figure 152).



Fig. 152. DS100 DuraSet Adhesive

Properties of DS100 Adhesive

Advantages	Moisture and alkali resistant, high initial tack. Solvent free, low odor.
Type	Pressure sensitive/Water based/Acrylic
Subfloors	Dry concrete on all grade levels, suspended wood floors and approved resilient floor covering.
Trowel	1/16" wide x 1/32" deep x 1/32" apart
Spread Rate	200 - 250 square feet/gallon
Working Time	12 hours Dry to tack - 45 - 60 minutes
Freeze/Thaw Stable	Yes
Flammability	Nonflammable
Tracer Color	Dark Red
Cleanup	Wet: Soap and water. Dry: Clean cloth dampened with mineral spirits.
Shelf Life	One year if unopened.
Sizes	1 qt. (12/ctn.); 1 gal. (4/ctn.), 4 gal.

DS100 – WARNING: Potential eye and skin irritant.
Mineral spirits – Caution: Flammable materials; read and follow cautionary statements on labels.

- The use of a high quality, floor covering, latex primer that is specifically designed to improve adhesion may be used over wood, porous concrete and patching compounds. The primer will help seal the surface and tie down dust that can interfere with the adhesive bond. Do not use paint primers.
- The recommended trowel notch size, 1/16" wide, 1/32" deep, 1/32" apart must be used** (Figure 153). Excessive amounts of adhesive applied with an improper trowel will delay drying time and can result in exudation (oozing up) of adhesive between tile in service. Insufficient coverage

(normally caused by worn notches on adhesive trowels) will prevent proper adhesion or bond to the tile. When trowel notches become worn (occurs more frequently on concrete subfloors), they should be re-notched to the recommended size or replaced.

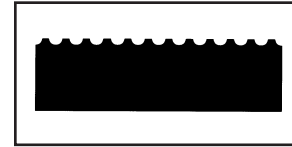


Fig. 153. Use the proper notched trowel.

- Spread the adhesive over one-half of the subfloor and a few inches beyond the chalk line with a notched trowel.
- Allow DS100 adhesive to dry completely to a tack** before installing tile. Drying time can vary depending on temperature, humidity and substrate conditions. When tacky dry, the adhesive will turn from light blue to clear. The final test is to place a finger into the tacky dry, clear adhesive and apply firm pressure. If the adhesive does not transfer to the finger when removed, it is ready for installation. Do not use fans to accelerate adhesive drying time. Fan drying will cause the top surface of the adhesive to dry prematurely, trapping residual moisture in and preventing the adhesive from fully curing. Tiles set into DS100 before it has completely dried may result in tile shifting and gapping.
- The installer has up to 12 hours to lay the tile into the adhesive.

F. INSTALLATION PROCEDURES

- With DS100 DuraSet Adhesive, the installation can be done while working on top of the newly installed tile.
- Complete one-half of the room at a time. Carefully position the first tile into the adhesive at the intersection of the chalk lines (Figure 154).
- Continue working toward the walls. Position the tiles at a low angle into adhesive tightly against previous tiles with corners lined up (Figure 155). Press tiles firmly without sliding. Spread adhesive on the second half of the floor so it can dry while you are cutting and fitting the last row of tiles.

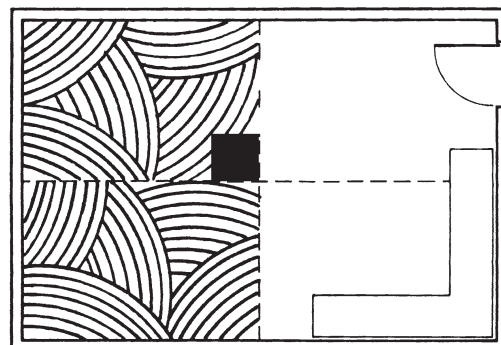


Fig. 154. Start installing tile in center of room.



Fig. 155. Position tile at a low angle.

G. CUTTING DURASTONE TO FIT

See “H. Cutting Tile to Fit” in Section XI. “Installing Tile Products” on pages 61 and 62.

H. IMMEDIATELY AFTER INSTALLING THE PRODUCT

- Roll the entire floor with a 100-pound, three-section, steel roller in both directions (Figure 156).



Fig. 156. Roll with a 100-pound (45 kilogram) floor covering roller

- Replace the base moldings and return furniture and appliances to the room by rolling or sliding them over strips of hardboard.
- DuraStone installed with DS100 DuraSet Adhesive can be walked on immediately. Wait 48 hours before washing. Adhesive smears can be removed with mineral spirits or charcoal lighter fluid.

CAUTION

Solvents are hazardous materials and should be used with caution in accordance with the manufacturer's label instructions.