**STEP 1: SURFACE PREPARATION**

- Tile may be installed over most structurally sound substrates.
- Make sure surface is clean, smooth, dry and free of wax, soap scum and grease.
- Any damaged, loose or uneven areas must be repaired, patched and leveled.
- Remove any moldings, trim, appliances or anything that could interfere with installation.
- Doorjambs may be undercut for tile to slip under.

**STEP 2: LAYOUT**

- Mark the center point of all four walls.
- Snap chalk lines between the center points of opposite walls. (Adjust if necessary.)
- Using tile spacers, lay out a row of loose tiles along the center lines in both directions. Leave space for uniform joints.
  **TIP:** If cuts leave tiles smaller than half of their original size, adjust the center line by snapping a new line a half tile closer to the wall. Repeat along other center line if necessary.
- Divide the room into smaller grids (approx. 2 ft. x 3 ft.) by snapping additional lines parallel to center lines.

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STEP 3: APPLYING ADHESIVE

- Mix only enough adhesive or mortar to be used within 30 minutes.
- Using the type of trowel recommended on the adhesive package, spread a 1/4 in. coat on the surface of one grid area, using the flat side of the trowel.

NOTE: Do not cover guidelines or a larger area than can be set in 15 minutes.
- Use the notched side of trowel to comb adhesive into standing ridges by holding trowel at a 45° angle.
- Remove excess adhesive, leaving a uniform, ridged setting bed.
- For large format tiles, butter the backside of the tile to ensure proper full-coverage. Use a medium bed mortar for tiles with a dimensional length greater than 15 inches on any one side.

NOTE: 90% mortar contact is recommended.

STEP 4: CUTTING TILE

- Carefully measure tiles and mark with a pencil or felt-tip pen.
- Make straight or diagonal cuts with a tile cutter, curved cuts with a nipper (chipping away small pieces for best results), and full-length curved cuts with a rod saw. Smooth out sharp-cut edges with a carborundum stone.
STEP 5: SETTING TILE

- Install tiles in the center, one grid at a time. Finish each grid before moving to the next. Start with the first tile in the corner of the grid and work outward. Set tiles one at a time using a slight twisting motion.
  
  NOTE: Don't slide tiles into place.

- Insert tile spacers, as each tile is set, or leave equal joints between tiles.

- Fit perimeter tiles in each grid last, leaving 1/4 in. gap between tile and wall.

- When finished, tap in all tiles with a rubber mallet or hammer and wood block, to ensure a good bond and level plane.

- Remove excess adhesive from joints with a putty knife, and from tile with a damp sponge.

- Do not walk on tiles until they are set (usually in 24 hours).

STEP 6: GROUTING JOINTS

- Using the instructions on the package, make enough grout to use in about 30 minutes.

- Remove tile spacers and spread grout on the tile surface, forcing down into joints with a rubber grout float or squeegee.

- Tilt the float at a 45° angle and remove excess grout from surface immediately with the edge of float.

- Tilt it at a 90° angle and scrape it diagonally across tiles.

- Wait 15–20 minutes for grout to set slightly, then use a damp sponge to clean grout residue from surface and smooth the grout joints, rinsing sponge often.

- Let dry until grout is hard and haze forms on tile surface, then polish with a soft cloth and wait 72 hours for heavy use.

  NOTE: Don't apply sealers or polishes for three weeks, and then only in accordance with manufacturer’s recommendations.
**GLOSSARY OF TERMS**

- **Back-butter**
  - Spreading of a bond coat to the back of a ceramic tile before placing the tile to ensure a strong bond with the thin-set mortar.

- **Balanced cuts**
  - Perimeter tile cut at equal size and installed on opposite sides of an area; also, equally sized cuts on each side of a miter.

- **Butt joint**
  - A plain square joint between two members with no grout joint.

- **Grout**
  - A mix used for filling tile joints, commonly based on portland cement or lime.

- **Mortar**
  - A mixture of cement paste and fine aggregate used to bond masonry together.

- **Plumb**
  - Perpendicular to true level, or vertically aligned.

- **Plumb cut**
  - A cut perpendicular to the true level or vertical alignment.

- **Plumber**
  - A skilled laborer who installs and repairs pipes, fixtures, and equipment for water and sewer systems.

**INSTALLATION INSTRUCTIONS**

**Step 7: Initial Cleaning**

- The complete removal of grout and dirt. Vacuum suspended dirt and grout is recommended. If some residue remains, further cleaning will need to be done in consultation with the grout manufacturer.

- For more aggressive cleaning, floor scrubbing machines equipped with nylon pads or brushes should be used. Wet vacuuming of the suspended dirt and grout is recommended.

- Clean successfully by scrubbing the installation with hot water and a pH neutral liquid cleaner (soapless), followed by a thorough rinsing. If necessary, use a grout cleaner (soapless) for more aggressive cleaning.

- Clean successfully by scrubbing the installation with hot water and a pH neutral liquid cleaner (soapless), followed by a thorough rinsing. If necessary, use a grout cleaner (soapless) for more aggressive cleaning.

- Ensure a strong bond with the thin-set mortar before placing the tile in the back-butter of the bond coat.